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TENSION TOLERANCE

CHAIRMAN'S ADDRESS

HARRY S. GRADLE, M.D.

CHICAGO

It has been customary in the past for your chairman to discuss some one of the economic problems confronting our specialty or to present some scientific fact or observation. However, I have chosen to present for your consideration one phase of the glaucoma problem that is known but not adequately recognized; namely, the critical point in intra-ocular hypertension.

In view of the ever increasing blindness from glaucoma, it behooves us to exercise even more than usual care and caution in dealing with that disease. In a limited number of cases of compensated glaucoma, normal function of the eye may be preserved almost indefinitely without recourse to surgical intervention, and in other cases the use of surgical measures may be deferred many years before lack of control becomes evident. It goes without saying that, in an intelligent self-disciplined person, management of the disease without surgical procedure is preferable, provided the integrity of the eye is not thereby damaged.

Unfortunately, the majority of cases of compensated glaucoma are seen by the ophthalmologist only when the condition is fairly well advanced and surgical procedure is indicated without further quibble. This is particularly true with dispensary patients, who have universally the unfortunate tendency toward drifting until blindness is inevitable. It would be folly to try to control the disease in such instances by other than surgical measures and, as was so well emphasized in this section last year, time should not be lost before proceeding to the operation of choice.

Fortunately, in cases of compensated glaucoma time does not play the important role that it does when there is clinical evidence of a break in compensation. Evaluation of the situation without haste is permissible and the ophthalmic surgeon is not hurried into surgical intervention by the devastating swiftness of the disease. The fluctuation of intra-ocular tension under the influence of treatment may be studied and plotted graphically so that its influence on the functions of the eye can be determined. This leads to an inquiry as to what constitutes increased intra-ocular tension and what are the limits of normal intra-ocular tension. Obviously, no two eyes respond the same to variations in tension, and the endeavor to place a numerical evaluation on the upper limits of so-called normal tension is futile. It is possible to estimate that upper limit in each individual case only by a determination of whether the function of the eye deteriorates under the existing degree of intra-ocular tension. Normal intra-ocular tension may therefore be defined as that degree of tension which the tissues of the eye are able to withstand without damage to function. And the final terms are dictated by the functions of the eye, the battleground between the ravaging destruction of increased intra-ocular tension on the one hand and the restraining influence of medical or surgical treatment on the other hand.

The function is obvious; namely, the act of vision. That act consists of three essential features in each eye: central field vision, peripheral field vision and central visual acuity. Consequently, any evaluation of the function of an eye must include accurate measurements of those three phases. Interestingly enough, there is a definite order of sensitivity of each aspect. Progressive loss of function due to hypertension will be manifest first by abnormalities in the central visual field, next by contractions of the peripheral visual field, and finally by a decrease in central visual acuity. With these facts in mind, it is evident that oft repeated estimations of the threefold aspects of vision are required to determine whether or not the function of the eye has suffered.

This is not the place to enter into a more or less theoretical discussion as to the reason for a pathologic increase in intra-ocular tension or as to the method whereby intra-ocular tension which is pathologically high for the eye in question produces the well known damage to function. This is rather a plea for the endeavor to ascertain whether intra-ocular tension that is commonly considered as above the upper tonometric limits of normal is really pathologic for the eye in question. In other words, what is the tension tolerance of the individual eye?

It is a well known fact that there are numerous instances of eyes in which the tonometric readings have ranged upward of 30 mm. of mercury (Schiötz scale) for years without damage to function in any one of its three aspects. It is also known that under the influence of emotion, physical stress or rarefied atmospheric conditions the tonometric tension will soar into the upper thirties and remain there for hours without damage to function. As opposed to that there are numerous cases on record of eyes whose functions have been lost with the typical picture of compensated glaucoma but in which the tonometric readings have never even approached the upper limits of the so-called normal. (This does not include the cases of Schnabel cavernous atrophy in which the loss of function and the clinical appearance are due to pressure by hardened arteries on the nerve trunks.)

These incidents are cited merely to show that intra-ocular tension which is damagingly high for one eye is still within the normal limits for another. This is just as true for an eye previous to medication as it is for one under the influence of miotics. Therefore, before pronouncing an intra-ocular tension pathologic it is necessary to determine whether that degree of tension is producing damage to the functions of the eye. If

Read before the Section on Ophthalmology at the Ninety-First Annual Session of the American Medical Association, New York, June 12, 1940.

repeated measurements show increasing pathologic abnormalities of the central field or contractions of the peripheral field or decreasing central visual acuity, then the tension tolerance of the eye has been exceeded and measures to decrease the existing tension must be instituted. Whether such measures should be of a medical or of a surgical character depends on the individual case and on the judgment of the ophthalmic surgeon. But the indication for the institution of such measures is the same in either instance; namely, that the eye cannot tolerate the degree of existent tension without damage to function.

There is nothing new in this line of thought or method of procedure, but the term tension tolerance is somewhat more comprehensive in its meaning as here expounded and emphasizes the idea that the indications for the medical or surgical lowering of intra-ocular tension are based on the influence of tension on function rather than on the mere existence of intra-ocular tension increased beyond the empirical numerical upper limit of so-called normal.

58 East Washington Street.

INDUSTRIAL ASPECTS OF EAR, NOSE AND THROAT PRACTICE

HAROLD A. FLETCHER, M.D.

SAN FRANCISCO

The development of state industrial accident commissions, marine industrial commissions, industrial accident insurance and public liability insurance has become so great that many private practitioners are becoming involved in this work, whereas a few years ago many refused to accept it. During the last twenty years I have had wide experience with this type of work. By far the greatest part of my industrial work has been acting in the capacity of referee or consultant, in cases which had previously been examined and treated and reported by from one to ten or more different physicians. Patients have been sent either by the state industrial accident commissions or by the insurance carriers in California and neighboring states, or in some cases patients have come on their own initiative for an independent opinion.

I feel that the best way for me to approach this subject is to discuss critically the way this type of work has been handled as I have had an opportunity to observe it. I have had a great opportunity not only to see a large variety of cases and conditions but also to get a good insight into what other men think, how they approach a given problem and their strengths and their weaknesses.

Over this period of time I have become more and more impressed with the fact that a great many doctors have very little understanding or have actual misconceptions of the problems involved in this type of work. There has been some improvement during the last few years, but a good many men still make snap diagnoses and jump to conclusions and feel disgruntled when they have to furnish reasons for their conclusions. Some feel that a written opinion is unimportant or beneath their dignity and that no one has any right to ask for it. Some feel that the fees for such cases and reports do not warrant careful and painstaking examinations and thought. As far as fees are concerned, I have found that, although they are below the average regular fees for private work of a similar nature, insurance companies and commissions are willing to allow a very fair return for good and able service. They are learning that cheap medicine is often the most expensive for them. Outlooks differ, but to me the most intriguing part of this work is the necessity of giving a written opinion with my name signed to it, knowing that some other specialist may not only disagree with me but have good reasons for doing so.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-First Annual Session of the American Medical Association, New York, June 12, 1940.

EXAMINER'S PROBLEM

There are three interested parties involved in each case: There is the injured patient, who usually and naturally wants as much compensation as he can obtain. There is the insurance carrier or self-insured employer who does not want to pay any more than he is legally responsible for. Lastly there is the industrial accident commission, which reviews the case, determines the responsibility, fixes the compensation if due and tells the insurance company or employer what amount the injured patient must be paid. The position of the ear, nose and throat specialist in relation to these three is to determine and report the facts and interpret them without fear or favor to any one of the interested parties.

To do this it is necessary to answer certain definite and fundamental questions in each individual case: 1. Is there a pathologic condition present? 2. Is the cause of the condition industrial or is it nonindustrial? 3. Does the condition create disability? 4. Are there other more probable existing or preexisting nonindustrial conditions which are contributing to or aggravating the condition, and is it necessary to correct these? 5. Can the condition be corrected? 6. Is the condition stationary or will it probably improve or get worse? 7. If stationary, what degree of disability exists, or, in other words, what has the patient lost that makes him less able than formerly to carry on his work? These questions should be faced honestly and answered as intelligently as the available facts and judgment permit.

One of my chief criticisms of many men doing this work is that they take sides in a certain case and allow prejudice to creep in. There is often a tendency for a consulting physician to try to build up a case as a lawyer would to win a case, hiding facts which hurt his side and unduly emphasizing points which will help to prove his side. I suppose that in some cases this a natural reaction, but it should be fought against and suppressed, as in the end it almost always reacts to the physician's disadvantage and injures his reputation. It is more noticeable in those doing work more or less exclusively for large corporations and those doing public liability work whose expert testimony is readily available in medicolegal cases. It often surprises me that a doctor will assume an almost personal responsibility for an injury or the results of an injury when he should in no way have any personal feeling in the matter.

EXAMINER'S APPROACH

Another interesting and general aspect, which is of importance in this work, is the attitude and approach of the doctor toward the patient. One encounters all types of personalities and characters among these patients. There are the strong and the weak, the cowardly and the brave, the aggressive and the retiring; there are the honest and the dishonest, the chiselers and racketeers, and there are different racial elements and other psychologic factors. In general too there is the fear complex of loss of functions, loss of time from

work, loss of income with family responsibilities and dependents, the bitterness of the economic situation and bitterness and suspicion toward employer, insurance company and doctor. Then there are other groups with a neurotic predisposition and the group which has a low pain tolerance. A sympathetic and understanding approach to the injured patient is of greatest help in obtaining the best cooperation between physician and patient. Even in the face of obvious lying and malingering, and even in cases in which there is a tendency toward a clash of personalities between the physician and the patient, it is a wise doctor who does not press his own views or feelings on the patient during his examination. One must be careful not to jump at the conclusion that a patient is neurotic or hysterical or a slave to imaginary complaints till one has proved that there is no organic basis for them, and then one has to evaluate all the foregoing factors to arrive at the reasons for the patient's reactions. This means that a little knowledge of psychology must be applied to ear, nose and throat work in these cases. A little thoughtful, sympathetic understanding of these points on the part of the specialist has been the means of rehabilitating a great many patients, whereas examination by a doctor with a hard-boiled attitude would have done untold harm. On the other hand, certain types need and thrive on more brusque and hard-boiled tactics. A good deal of care and judgment is necessary to make a decision in a given case.

IMPORTANCE OF EARLY EXAMINATION

There is still prevalent a tendency on the part of general physicians and surgeons and insurance carriers to delay calling in a specialist, particularly in cases of multiple injuries and in those of head and skull injuries. This delay has often led to greater disabilities and difficulties later in fixing a fair compensation. Insurance carriers, as well as some general surgeons, are learning this and in larger centers have corrected this to a certain extent. In smaller communities where the services of specialists are not readily available the delay cannot be helped. The result of delay in not having a specialist examine and make notes on the case as soon as possible after the injury often leads to many difficulties later on. A true history is often obtainable soon after the accident when the patient and relatives wish to cooperate with the doctor to aid in recovery as soon as possible. Later, when acute symptoms have subsided and compensation factors have begun to work, the patient often colors the history so as to make it appear that preexisting conditions were caused by the accident. Examination made as soon as possible after the injury, with careful notes, are of greatest importance. A history of existing chronic sinus infection, chronic or recurrent aural discharge, previous loss of hearing and the like not only may have the greatest bearing on the immediate treatment but may later be of the greatest importance in evaluating disability.

A careful history and consideration of the mechanics and careful, accurate first examination notes of the injury, how it was caused and how it occurred should always be obtained when possible. This point is often neglected and at times assumes great medical as well as medicolegal importance. Recently a patient received a blow over the left eyebrow when he stepped in a hole in the floor while he was carrying one end of a sofa. The end of the upturned sofa leg, about 2½ inches in diameter, struck him as he fell forward against it. A bruise was caused which was described by the general physician called in as being over half an inch to the left of the midline. A few days later an acute frontal empyema of the right frontal sinus, maxillary and ethmoids developed. A local specialist operated on the frontal sinus externally and later, in consultation with another specialist from San Francisco, reoperated on it. Weeks later the patient claimed compensation for medical and hospital care and loss of working time on the basis of his injury. The local specialist said that the injury undoubtedly caused the frontal abscess. The San Francisco consultant refused to commit himself. The evidence, from the notes of the first physician, showed that the bruise was over the left frontal sinus at least one-half inch from the midline. The roentgenograms showed the dividing frontal septum to be in the midline. There was no involvement of the left frontal sinus. The mechanics as to how the blow occurred, the size of the object, the direction and severity of the blow, all taken together, decided the case against the patient in favor of the insurance carrier.

In many cases the specialist is asked to examine and give an opinion on the patient any time from months to years after an injury. Some insurance companies or their claims department see no reason why such a consultant should want to review the files and reports of the original accident and reports showing what happened between the time of the injury and the time the consultant is called in for an opinion. I have always insisted on these reports if in any way accessible, even when the site of the alleged injury is far from the head and neck. In one case a bilateral very marked deafness of the internal ear was claimed by a patient who had lost a leg and had an abdominal injury two years before. Two specialists had claimed that his deafness had nothing to do with his injury. The industrial accident commission sent him to me as referee. I obtained the hospital records after some delay and reluctance on the part of the self-insured corporation which employed the patient. In these I found that the patient had had two secondary hemorrhages almost to the point of exsanguination, had been under several ether anesthesias of long duration at this time and had complained to the nurses and doctors of severe tinnitus in both ears following these, and later of impaired hearing. Although the original injury did not directly cause the deafness, it was quite possible that a very severe hemorrhage combined with long anesthesias and general infection might have. So it is of the greatest importance that, before rendering an opinion or even making an examination, all available data be obtained by the consultant. If such data are not available, one must qualify one's opinion in certain cases.

METHOD OF EXAMINATION

As to the examination itself, it should be as complete as possible, and observations should be made with meticulous care, all the necessary methods and tests being used. Nothing should be taken for granted. Tests reported by previous examiners, unless one is sure of them, as in the case of x-ray and laboratory tests, should be checked and often rechecked. The examiner should always remember that when he signs his name to a report it may be subject to review by another specialist, who may not be his friend, and if the original examiner has missed a perforation in the ear drum or has not noted that a nasal septum has been previously operated on his competitor can make him look foolish.

In this regard I want to make one suggestion: A specialist should not try to make the other man look foolish or put him in an embarrassing position. He should be honest and frank in his differences of opinion and give his reasons but should not rub it in—it may

backfire! There are many cases in which honest differences of opinion can exist and in which at times both sides may be partly right and neither side completely right. There are many cases in which it is really a matter of opinion or experience as to whether the injury is the cause of the trouble or not, with no definite deciding factors present.

The foregoing has been concerned mostly with general considerations which I have found are often not understood by many doing this work. There is not space nor is it my purpose in this paper to name and describe a long list of industrial injuries. Rather it is to point out some of the important points and problems which in my experience have caused the most confusion and difficulty in evaluating.

INJURIES TO FACE, NOSE AND SINUSES

Injuries to the face, nose and sinuses I find are in general fairly well understood and treated. The cause and effects are perhaps more obvious, although even here one must not jump at conclusions. The time and method for the resetting and replacing of depressed and fractured bones, operations on sinuses for drainage or curettement, treatment of cosmetic defects and maxillary fractures involving the alveolar process and causing malocclusions of the teeth are all well known. Fractures involving the inner plate of the frontal sinuses or through the ethmoids and sphenoids must be carefully studied and watched and nothing must be done to disturb these regions until such time has elapsed that one is sure not to cause deeper intracranial infection unless complicating symptoms make procedures necessary. The question that often arises is this: Has a given moderate or mild injury over a sinus caused the sinus infection? This question is often hard to decide. Under normal conditions even a fairly marked fracture of the wall of the maxillary, frontal or ethmoids does not cause a sinus infection. There may be sterile blood clots which drain out, and that is all. On the other hand, when infection is found it is difficult to say that even a moderate contusion was not the initiating cause. Coincidental presence of an acute infection of the upper respiratory tract with injury to a sinus does not relieve the injury of a possible causal responsibility. Preexisting chronic sinus infections may be lighted up by injury over one sinus, and if it was a chronic pansinus infection all the sinuses are apt to flare up. The difficulty is in the proper evaluation of what effect the injury had on the existing condition. In other cases shock, hemorrhage, exposure and fatigue following injuries to distant parts must be held as the indirect cause of acute exacerbations of chronic sinus infection and their complications. Sinus infection and obstructive nasal conditions following short or continuous exposure to certain kinds of smoke, gas fumes, chemical dusts and irritants are often hard to evaluate, owing to individual tolerance and predisposing or preexisting causes. Under this heading come the many allergic factors. Usually having the patient change his occupation or place of work will clear up the condition, but the patient often fights off his trouble to keep his job until his nose and sinuses are in such a state that long, expensive treatment is necessary. Irritants are occasionally self instilled in the nose by the patient, as was done by one of mine who, even when hospitalized, was caught snuffing pepper into his nose.

LOSS OF HEARING

The question of loss of hearing following injuries either directly to the ear or nearby parts or indirectly from injury to distant parts I have found to be one of the most difficult problems to analyze and one which causes more confusion in the minds of other specialists than anything else. In many cases the problem of dizziness and vertigo is combined with the deafness and tinnitus, and the problems are overlapping.

There are, of course, the long lists of obvious direct injuries to the ears which give little trouble in diagnosing and evaluating. Foreign bodies, sparks, chemicals getting into or being forced into the ear, blows over the ear causing rupture of the drum, explosions causing an inner ear destruction—all these are usually easy to understand. The important question that always arises in the case of secondary otitis media is: Was the otitis media coincidental and the cause of the ear condition or was the otitis media caused by the injury? Careful questioning of the immediate train of symptoms following the injury and immediate careful examination of the external canal and ear for other signs of injury will often decide this point.

Not so obvious are those cases of injury to the skull involving either the region of the ear and mastoid or more distant parts, after which the patient claims loss of hearing and tinnitus due to his injury or claims vertigo as an incapacitating disability, or both. The two divisions of the inner ear, the cochlea and the labyrinth, are probably the two most often affected parts in head injuries. It has been my experience that there is more misconception of injuries to these parts than in any other field in this type of work. Of the two divisions, I have more trouble analyzing and evaluating the industral loss of hearing to my own satisfaction than analyzing and evaluating the changes in vestibular function leading to vertigo and imbalance. Yet in reviewing many hundreds of reports of other specialists and neurologists I find them much more confused over the vestibular complaints and manifestations. The trouble seems to lie in a lack of knowledge as to what can happen to both divisions of the internal ear and their intracranial connections in the brain, what symptoms are caused and how to determine by tests whether such injuries or disturbances are present.

It used to be much more simple to decide these factors than it is today. There were certain dogmatic rules based on theory rather than facts which, if followed, made conclusions easy if false. I remember that after I read a paper [1] before this section in 1922 I was given a great working over by none other than Dr. George Shambaugh for stating that partial internal ear deafness could be caused by skull injuries and concussions. It was his view that the cochlea was either totally destroyed or remained free of injury in such cases and that the labyrinth was totally destroyed or remained free of trouble with the cochlea. Dr. Shambaugh and others may still feel the same way about it, but I think that most of us are convinced, not only from our clinical experience but from the wide observation of many on microscopic pathologic changes, backed up by the experimental work of others, that partial inner ear deafness and partial destruction of labyrinthine function can, and not uncommonly does, occur in various head injuries without complete destruction being caused. We are further convinced that the pathologic condition may be found in the inner ear itself, in the nerves or substance of the brain or in a combination of these locations. Space

1. Fletcher, H. A.: Determination of Disability as to Loss of Hearing and the Importance of Vertigo in Industrial Accident Cases, J. A. M. A. 79: 529 (Aug. 12) 1922.

does not permit of description of the pathology and mechanics of these disturbances, the location and type of fractures, the changes in the cochlea and labyrinth secondary to changes in circulation and cell structure, small hemorrhages into the perilymph spaces and in substances of the brain stem, commotion and shattering of the organ of Corti, secondary connective tissue formation, and the like. For reviews of the literature and references on this subject I particularly recommend the papers of Grove,[2] Linthicum [3] and Schaller.[4]

Even greater than the confused knowledge as to what may happen in these injuries is the superficial knowledge as to what observations and tests are necessary to determine evidence of the pathologic condition and how to make them, as evidenced by the reports I have reviewed. The vestibular examinations are of the greatest importance in shedding light on these conditions; yet, to be of any value to the patient, the brain surgeon or neurologist or to the reviewing commission, they must be carefully carried out. Perfunctory and casual examinations are worse than none at all in many cases. The very careful observation of spontaneous nystagmus, past pointing and postural unbalance can be made only by repeated observations, good lighting conditions and care in elimination of outside factors not pertaining to the vestibular apparatus. The various tests of turning, head movement and caloric stimulation must be carefully and unhurriedly made and not made by just going through the motions.

I have found definite spontaneous vestibular nystagmus of a pathologic nature, or spontaneous past pointing, in so many cases in which it had been missed previously by other examiners that I feel sure that a great many men either do not understand the subject or, worse, make superficial observations. To me the spontaneous reactions may be of even greater importance than the induced reactions. Although not common, and somewhat differing from observations of other men doing this work well, I have noted quite a few patients with a spontaneous vertical nystagmus. Spontaneous past pointing, while definitely under some voluntary control of the patient, properly evaluated, has at times definite importance in judging a case.

As for the labyrinth tests themselves, there are men who confine themselves simply to turning the patient; other men confine themselves to mass caloric irrigations and turning tests; others use only the Kobrak test or the small measured amounts of water, paying particular attention to the finer gradations of latent time, character and duration of the induced reactions. I myself feel that one misses certain important signs unless one uses each of the methods in selected cases. In addition I frequently use the bi-aural mass irrigation in the two ears simultaneously, which often brings out an unbalance between the different canals that would otherwise be overlooked. There is one reaction with this test which I formerly considered as evidence of intracranial disturbance, and this is a vertical nystagmus upward after bi-aural caloric stimulation of the two horizontal canals simultaneously. As this occurs occasionally in normal patients who have been examined for demonstration purposes, I have long been suspicious that this reaction may have no pathologic significance, and recently I have learned from Dr. Spiegel [5] of Temple University that Brunner [6] and others do not consider it pathologic. Regardless of the method used, careful description by the patient of what he means by his feeling of dizziness, and meticulously careful observation of spontaneous and induced reactions will decide the difference between a functional or an organic disturbance, and usually the difference between a peripheral and a central lesion. These are the points of importance to be determined. If the patient is shown to have normal labyrinthine reactions, he has in my opinion no organic cause for his complaint of vertigo. If he has a marked hypoirritable labyrinth on one side and a normal or hyperactive labyrinth on the other, there is in my opinion a peripheral partial destruction of one labyrinth, and these patients are much more incapacitated for a longer time than if there was complete and total destruction on one side. If the patient presents signs such as spontaneous nystagmus, perverted induced reactions of nystagmus or past pointing, falling and the like, a disproportion between reactions of one set of canals as compared with the other, marked reduction in the normal general reactions of nausea, sweating, pallor, vomiting and the like, the indication is that the lesions are central in character, and this type of disturbance is apt to cause a more or less severe disability permanently or for a very long period of time. If the patient shows the uncomplicated aspects of a complete destruction of only one labyrinth, the prognosis is good for the clearing up of vertigo in from a few weeks to a few months.

As stated before, in my opinion the evaluation of disabilities from the vestibular or vertigo standpoint is much more clearly determined in relation to the accident or trauma than is that of disabilities of hearing. Many patients have a preexisting loss of hearing, either stationary or progressive, perhaps of such gradual onset or of such long duration that they have taken little note of the trouble. The hearing loss has not as yet constituted a disabling factor. One sees a large number of these in one's daily practice, with no history of trauma. If a patient suffers from vertigo he rushes to a doctor, but if he has a gradual loss of hearing he often stays away as long as he can. Of the two conditions, dizzy attacks are far more disabling than loss of hearing, and in this I agree with Ruttin,[7] Rhese [8] and others. Therefore, it is often very difficult to say that a patient claiming hearing loss after trauma to the head may not have had a preexisting loss to account for it.

Certain patients present no particular difficulties. The obvious transverse fracture of the pyramid with or without bleeding from the ears and complete destruction of the labyrinth and cochlea, the longitudinal fracture usually causing bleeding from the ear and possible evident disturbance and rupture of the drum and middle ear structures are cases in point. Those cases with marked unilateral or bilateral deafness following explosions through air concussion forces, also certain cases of head trauma in which definite coexisting evidence is found of disturbances of the labyrinth and vestibular pathways, may be fairly easily diagnosed correctly as attributable to the injury.

2. Grove, W. E.: Otologic Observations in Trauma of the Head, Arch. Otolaryng. **8**: 249 (Sept.) 1928; Skull Fractures Involving the Ear, Laryngoscope **49**: 678 (Aug.), 833 (Sept.) 1939.
3. Linthicum, F. H.: Neuro-Otological Observations in Concussion of the Brain, Arch. Otolaryng. **12**: 785 (June) 1931.
4. Schaller, W. F.: After-Effects of Head Injuries, J. A. M. A. **113**: 1779 (Nov. 11) 1939.
5. Spiegel, E. A.: Recent Advances in Neurology of the Ear, Confinia neurol. **1**: 59, 1938.
6. Brunner, Hans: Tr. Am. Acad. Opth. & Otolaryng., 1935.
7. Ruttin, Erich: Ueber frische traumatische Läsionen des Labyrinth, Monatschr. f. Ohrenh. **46**: 475, 1912.
8. Rhese, K.: Beiträge zur Kenntniss der Beteiligung des inneren Ohres nach Kopferschutterunge, Deutsche med. Wchnschr. **32**: 625, 1906.

THE MALINGERER

But those cases of skull fracture not involving the temporal bone, or head injuries without fracture in which cerebral concussion symptoms were mild or absent but in which a loss of hearing due to the accident is later claimed, are often hard to evaluate or differentiate from preexisting hearing loss. It is in this group that one often finds the malingerer and the exaggerator, but one also finds honest loss of hearing which is the direct result of the accident. These cases often show evidence of previous middle ear processes which one is morally certain caused previous loss of hearing. It is also known that many nontraumatic private patients may have very advanced losses of hearing with no tangible evidence as to the cause. The hearing tests and audiometer curves in a traumatic case may be very similar to cases with no history of trauma. One point which has shown up consistently in my experience is the presence of markedly shortened bone conduction in most cases of skull fracture regardless of its location, and in many cases of only a mild or no loss of hearing by air conduction. This curtails the usefulness of bone conduction examination in many cases.

In cases in which hearing loss is claimed in only one ear there is the good ear for comparison. In my experience hearing defects in head injuries are far more often unilateral than bilateral, and the injured ear is more often on the side of the skull injury. If the ear in which a loss of hearing is claimed shows a different form of audiometer curve as compared with the ear in which no injury is claimed, it is presumptive evidence that the loss is traumatic. Bilateral loss of hearing, however, does occur but in my opinion rarely to the same degree in the two ears, except in the more profound losses found in basal fractures or severe cerebral concussions. When I find an almost equal bilateral loss of hearing with parallel audiometer curves of the usual abrupt or gradual high tone loss seen in nontraumatic cases and of only mild or moderate degree I am inclined to consider it nontraumatic in origin. It is conceivable that destruction of the same degree may occur through concussion transmitted through the two endolymphatic ducts, but I feel that this is rare.

Malingering or faking hearing loss is frequently encountered, and these cases are often missed. Many times patients cause suspicion by overacting their loss, but often suave actors with all the appearances of honesty are found malingering. The easiest to detect are those claiming complete or almost complete unilateral deafness. Many catch tests or confusion tests detect these cases, but the most conclusive test is the Stenger test. Malingering of marked bilateral deafness is often hard to prove, particularly in cases in which frequent tests have been made by many examiners. Discrepancies in repeated audiometer tests are often evidence of malingering, and audiometer tests should be carefully rechecked in most cases. Sometimes the only way to detect these discrepancies is for the insurance company to have a detective watch the patient.

COMPENSATION FOR LOSS OF HEARING

The rating of compensation for loss of hearing is interesting. The patient is usually compensated on the basis of what hearing he is reported by the ear specialist to have lost through the accident. It is also based on the impairment to his ability to carry on his work which has resulted. The duration of the compensation or total amount is based on the estimated time a willing patient would ordinarily take to rehabilitate himself, either in his previous work or in taking up some other line of work more in keeping with his disability. The question arises as to what constitutes useful hearing. A patient doing certain kinds of labor may not be in any way incapacitated with a bilateral 25 per cent loss of hearing, whereas other types of work may necessitate almost normal hearing. In California the commission allows a 40 per cent disability for a 100 per cent bilateral loss of hearing, which means 160 weeks of compensation at 65 per cent of his previous average weekly wage. A 25 per cent loss of hearing in both ears is rated as a 10 per cent disabilty, which means forty weeks of compensation at the rate of 65 per cent of his previous average weekly wage. This is possibly too much in the case of a laborer and too little in the case of a mechanic whose work may need acute hearing. I think that otologists experienced in this work should make a group study of this aspect and attempt to arrive at a possibly more accurate standard method of rating hearing losses.

COMMENT

This presentation of industrial aspects of ear, nose and throat practice touches only on some of the broader problems as I have seen them. Many of these problems are not recognized by as many otologists as they should be. Many points are controversial, and I think that an effort should be made by the members of our specialty to give the subject the benefit of group study and discussion to clarify these controversial points as much as possible. The subject is becoming increasingly important and with the possibility of war on the horizon may become acutely so, because war disabilities and industrial disabilities have a great deal in common.

490 Post Street.

ABSTRACT OF DISCUSSION

DR. W. E. GROVE, Milwaukee: The line of practice to which the author refers is almost entirely medicolegal in character. Industrial medicine and surgery is a large and ever growing field. A doctor can and should handle these cases in a manner so efficient and so impartial that he retains the respect of the injured, the employer, the industrial commission and the courts. Industrial medicine and surgery should be done by a doctor with these qualifications. Dr. Fletcher is quite correct in saying that the most difficult question to evaluate after a head injury is the alleged loss of hearing. In the first place, after a head injury of any severity there is a clouding of the sensorium and of the hearing immediately following the injury which frequently clears up. If the patient is unscrupulous or neurotic, he may easily project this symptom into the future. Second, there are many cases in which the loss of hearing antedates the injury and the cause for such loss of hearing must be investigated. Third, the hearing defect after a head injury should fall into certain well established patterns, depending on the nature of the pathologic condition: a transverse fracture of the pyramid, a longitudinal fracture of the temporal bone, or a brain concussion with no demonstrable bone lesion. If the hearing defect does not fall into these patterns, one should be suspicious of trauma to the head as a causative factor. To estimate how much disability a hearing loss constitutes to the individual in general and to the individual in his own particular line of work is difficult. Complete loss of hearing in one ear is probably not as important to the individual as complete monocular loss of vision, and it is probably not as disabling as persistent vertigo. I cannot agree with the author that the loss of hearing affects only one ear in the majority of cases. In my experience the reverse is true, although I will admit that one ear is usually more involved than its fellow. The disabling effects of vertigo are variable, depending on its severity, its frequency and the nature of work engaged in and must be evaluated individually for each particular person and for each particular occupation. I agree with Dr. Fletcher that the spontaneous signs and symp-

toms of a deranged vestibular function are of more value in studying and evaluating the vertigo than induced labyrinthine reactions, but for a complete evaluation of the disabling effects of vertigo we must combine the psychologic characteristics of the patient, the complaints as offered, the spontaneous signs of vestibular derangement, the induced labyrinthine reactions and the occupation of the patient.

DR. H. A. KUHN, Hammond, Ind.: The otologist rarely knows anything of the previous hearing experience or the extent of injury by immediate examination of an injured employee. A phase of industrial otolaryngology which seems to be unclear is the otologic aspect, especially industrial deafness. Polokov, in his book The Power Age, states that "the labor specifications for a really modern industry are expressed in three terms: (1) sustained attention, (2) clear perception and (3) quick reaction, and only the most competent will be useful in industry." Speedups in rearmament will demand more competence of employees. Hence the problem of preventive otology should in the near future assume a very important position. During the last ten years this consciousness of accurate hearing in industry has seemed to come to the fore. Whereas it was formerly uncommon to have men from industrial plants complain of hearing difficulties or to have them rejected for employment unless the hearing difficulty was very marked, it is now quite common for them to notice that they do not hear the operation of machinery as accurately as formerly, and they are more frequently being rejected for hearing difficulties. In the future in otology just as in ophthalmology much more extended investigative work will be done in the employment divisions of modern industry. The problem of industrial deafness resolves itself into a matter of preventive medicine. After there has been injury to the end organ by repeated shocks and noises, we are at a loss to help the patient. Therefore, as otologists, we should practice more preventive measures. We should attempt to recognize these conditions in their early stages and we should try to do something to prevent workers from suffering repeated injuries to their ears. The only way to arrive at conclusions in this matter is to (1) record the hearing of all new employees, (2) at intervals recheck all those working and at shorter intervals all those subjected to persistent loud noises such as air hammers, and (3) make careful examinations of the ear drums, nose and throat, investigate the family history and see to the moving of employees who show progressive hearing lesions to departments in which they are not subjected to otologic trauma, just as men subjected to a lead hazard are moved to completely free areas as soon as evidence of circulating lead is discovered. With the rearmament program going ahead full speed, the physical defectives interfere with the progress of that program. They must be kept from key points in modern mechanized industry by selectivity, and only by selectivity can we as medical men defeat this disintegrating influence on our national rearmament program.

DR. WALTER F. SCHALLER, San Francisco: A neurologist often leans heavily on the otologist, and I am going to take this occasion to testify my appreciation of the help I have often received from your specialty. Vertigo or dizziness as described by the patient often concern me much more than deafness. By complaint of "dizziness" the patient may mean a true vertigo, or he may mean a feeling of faintness or inability to walk in a straight line, all of which symptoms may be quite different in origin. The symptoms may be psychoneurotic in origin or due to an irreversible postconcussion state. In the psychoneurotic, whom I shall not discuss here, such symptoms are usually hysterical and due to a fixation of previous experience.

DR. REA E. ASHLEY, San Francisco: The need for more information of the type presented by Dr. Fletcher is great in this age of high industrialization with its incident development of industrial accident commissions, industrial accident insurance, public liability insurance and the various government insurance agencies. As time goes on, general medical men as well as specialists will be called on more frequently to render opinions on industrial injuries. Very little has appeared in the literature regarding this increasingly important subject and what has appeared has been fragmentary. It is desirable to have some standardization of methods of examination and correlation of symptoms to the pathologic condition as a guide for those of us who see these cases only occasionally. The only method of obtaining such a guide is by the accumulation of the experience of those men who see great numbers of industrial injuries and the careful preparation of such data and statistics. May I offer the suggestion that the chairman of this section be requested to appoint a special committee to accumulate as many data as possible on the subject and from this information to suggest a modus operandi for the examination of head injuries as related to our specialty, together with an outline of any other information that may be helpful in drawing correct conclusions regarding the percentage of disability and the probable prognosis in these injury cases. The plan will necessarily have to be broad, since each case will present its own problems; but, if some base line can be established as a point from which to start, much will have been accomplished. The information will be of the utmost value to the general physician, the specialist, industrial accident commissions, insurance actuaries and the United States government.

DR. HAROLD A. FLETCHER, San Francisco: There are so many controversial angles which often arise in cases of head injuries that the medical profession, including specialists, is often put in the position of not knowing or understanding, and of not having any standards of agreement in these conditions. The legal profession, the industrial accident commissions and the lay public get the idea that we do not know what we are talking about. Lawyers use this confusion to trump up for their clients permanent disabilities from absurd alleged injuries. I have seen so much of this, arising from illogical controversial discussions in the medical reports I have reviewed, that I feel it high time that we as a group should come to some agreement on standards of computing industrial disabilities.

TREATMENT OF DISEASES OF THE THROAT

LYMAN G. RICHARDS, M.D.
BOSTON

The term "throat" as understood for purposes of this discussion is conveniently divisible into the mesopharynx and the hypopharynx. The mesopharynx is bounded posteriorly by the posterior pharyngeal wall, laterally by the lateral pharyngeal walls, superiorly by the nasopharynx and inferiorly by the larynx and upper pharyngeal end of the esophagus. Anteriorly it is bounded by the base of the tongue and by the open space directed toward the mouth. The chief organ within the hypopharynx is the larynx, bounded above by the mesopharyngeal space, posteriorly by the upper end of the esophagus, inferiorly by the trachea and anteriorly by the base of the tongue.

THE MESOPHARYNX

Within the mesopharynx lie the well known masses of lymphoid tissue, more or less symmetrically arranged to constitute Waldeyer's ring, which through their tendency to disease constitute such a large factor in the field of laryngology. Chief among these primary pathologic conditions affecting these lymphoid structures are the various infections divisible into acute and chronic. While the different masses of lymphoid tissue within the mesopharynx often share in irregular fashion in such infection, in a high percentage of cases the larger masses or faucial tonsils may be taken as representative of such infection and the treatment applied to them as the basic essential for other smaller areas with similar involvement. Thus simple acute follicular tonsillitis with its almost classic symptomatology is

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representative of the commonest form of acute lymphoid infection. Its treatment consists of two parts, the systemic and the local. Patients suffering from acute tonsillitis should be kept in bed on a liquid or semisolid diet designed to relieve the almost constant dysphagia and permit assimilation of nourishment with as little discomfort as possible. I believe that a daily dosage of 15 or 20 grains (1-1.3 Gm.) of acetylsalicylic acid is helpful, supplemented, according to the discomfort, with codeine or even morphine, as designed to insure the patient as much general comfort as possible. I believe that properly constructed and properly applied hot moist external compresses of cotton sheet wadding saturated in saline or isotonic salt solution and closely applied around the patient's neck are definitely comforting in spite of the apparent objection that nothing is actually absorbed through the surface skin. If instead of saline solution some one of the proprietary preparations containing additional medicaments such as sodium perborate, sodium carbonate and small amounts of essential oils is utilized, the comfort of the patient is still further enhanced. With respect to internal therapy, I doubt greatly the efficacy of a gargle since the process of gargling approximates the tongue and soft palate in such a way as to keep any gargle material quite away from the tonsil surfaces. The sucking of various anesthetic lozenges containing such medications as chloroform, I believe, affords some comfort when the medication is swallowed, as does also the present popular aspirgum. I like the application to the surface of the tonsil itself of 2 per cent silver nitrate, great care being taken that the drug comes in contact only with the tonsil surface and its crypt. I have almost equal enthusiasm for the local application of either 1 per cent aqueous methylene blue or gentian violet. Finally, I believe in hot saline or dextrose irrigations given with the patient's head well forward and by a nurse who understands the technic and who appreciates that the hotter such solutions are given the greater their efficacy. The aforementioned therapeutic measures should if possible be made a matter of daily routine. Finally, I believe that the use of an infra-red lamp, placed at a distance of 18 or 20 inches from the side of the patient's face and utilized for fifteen minutes three or four times a day, is a useful adjunct. In view of the self-limited nature of the disease, I cannot as yet bring myself to believe that routine use of sulfanilamide is either necessary or advantageous. My few experiences with it have led me to believe that, if given as commonly advocated, it frequently makes the patient more uncomfortable than the initial disease. In the absence of systemic complications or signs of systemic toxemia, I do not see indications for its use in simple acute tonsillitis.

The treatment of pharyngeal diphtheria, fortunately so increasingly infrequent, is quite obvious. Cultures should be taken of any suspicious membrane and, with the diagnosis of diphtheria returned from the laboratory, diphtheria antitoxin in adequate doses should at once be administered. The dosage may range from 5,000 to 30,000 units, according to the severity of the disease. Care must be taken in excluding possible sensitivity to serum by small intradermal injections of a single drop of antitoxin and observing the patient for local or systemic reactions.

Vincent's angina, affecting the mesopharynx and most commonly the tonsillar surfaces, is, owing to the anaerobic nature of the positive organism, best treated by the application of oxygen-bearing medication to the affected necrotic surface areas. Most satisfactory of these I still find 7 per cent chromic acid applied on a cotton tip swab two or three times a day. This should be supplemented by suitable measures for the attainment of as good oral hygiene as possible, such, for instance, as a mouth wash of sodium perborate or the commercial vince or pharyngeal irrigations with a 1:10,000 solution of potassium permanganate. Strict attention should be given to the gums to prevent any spread of the infection to peridental areas. Local application or arsenicals such as arsphenamine is also a satisfactory form of treatment and in those rare instances in which the systemic signs with elevated temperature become evident, such arsenicals should also be given intravenously. Still more recently, but with less experience, I have been pleased with results obtained from the use of antimony and potassium tartrate (5 per cent). In view of the contagious nature of this condition, the patient is first isolated with particular attention to segregation of his food and eating utensils and other articles by which contamination may occur. So-called acute streptococcic sore throat, often epidemic in origin, and with inflammation more diffuse and less restricted to the tonsils themselves, has heretofore offered a most discouraging outlook from a therapeutic standpoint owing to the inability to achieve any specific therapy for this infection. The same measures designed to relieve discomfort in acute follicular tonsillitis are of course indicated here with the addition, particularly in the effort to combat systemic symptoms, of sulfanilamide, which is a most welcome specific agent in this disease. Variations in dosage and methods of its calculation are somewhat beyond the scope of this discussion, and the ever present possibility of complications and indications for withdrawal of the drug must always be kept in mind.

Peritonsillar Abscess or Quinsy Sore Throat.—By true peritonsillar abscess or quinsy sore throat is meant the localized collection of pus in the supratonsillar space bounded anteriorly by the upper portion of the anterior pillar, posteriorly by the posterior pillar and inferiorly by the superior pole of the tonsil. Any attempt at therapy is premised on the recognition of the presence of such a collection of pus to the point that surgical drainage is required. During the preliminary period in which an abscess may be forming, incision and drainage are contraindicated and the ideal therapy consists in relief of pain by sedation and by hot saline irrigations within the throat. Once existence of a peritonsillar abscess has been established by the clinical signs such as trismus, a point of maximum induration or suggestive fluctuation above the point of juncture of the anterior and posterior pillars, surgical drainage is indicated. This disease almost exclusively occurs in adults, seldom if ever in children; hence drainage is not only feasible but advisable under local anesthesia. In spite of exquisite local tenderness, it will be found that topical applications to the point of maximum induration of cocaine crystals will produce a satisfactory surface anesthesia. A long-handled Bard Parker knife with a No. 11 sharply angulated blade is then carried directly posterior at a point just above and median to the superior pole of the tonsils and directly through the soft palate tissue. It will be found that this incision produces only a minimum of pain. The knife blade is

carried inward a distance of from 1 to 1.5 cm. and then withdrawn. In nine times out of ten, if the clinical diagnosis has been made correctly and an abscess is present, withdrawal of the knife blade will be followed first by sharp bleeding but then immediately by a thin trickle of yellow pus, indicating contact with the abscess cavity. The blades of a slender, long-handled tonsil hemostat are then introduced through this incised track into the abscess cavity and quickly and vigorously opened. There will be an immediate gush of from 1 to 2 Gm. of pus, which the patient, with his head dependent over a basin, promptly expectorates. This divulsion of the track to the abscess is admittedly painful and I have yet to find any local anesthesia by which it can be avoided. I have tried the suggestion of anesthetizing the sphenopalatine ganglion in the nose but have not found the additional analgesia to compensate for the discomfort of the nasal procedure itself. Thereafter, hot saline irrigations for one or two days following incision will almost always lead to rapid subsidence of inflammation and prompt relief of the patient with only infrequent necessity of separating the wound edges or dealing with any adequate or impeded drainage. Subsequent tonsillectomy, particularly in the face of one or more attacks of peritonsillar abscess, is, I believe, clearly indicated. Failure on attempted incision to reach such a peritonsillar abscess should lead to abandonment of further attempts to probe hither and yon in an effort to find it. Observation and supportive treatment with sedatives and external and internal heat may be followed by a second and more successful attempt, provided the patient has not sought help from other sources.

Acute Pharyngitis.—Acute pharyngitis with congestion and inflammation of the posterior pharyngeal wall, oftentimes with enlargement of the small follicular lymph nodes scattered about on its surface, is a common complaint, particularly by patients who have undergone a previous tonsillectomy. Its present treatment is far from satisfactory, and the number and variety of remedies advocated bear witness to the lack of success of any specific remedy. I have as yet found nothing superior to periodic applications to the entire posterior pharyngeal wall of 3 to 5 per cent silver nitrate applied with a cotton tipped swab. Gargles are useless but I believe that patients frequently derive much comfort from a simple home remedy consisting of an instillation, through the nostrils, of a combination of sodium chloride, sodium perborate and sodium carbonate which, if the head is held in the proper position, will strike against the entire posterior pharyngeal wall and, by its astringent action, afford the patient considerable relief. This position can be satisfactorily assumed only when the patient sits in a chair with the base of his spine well away from the back of the chair and with the head so extended that the medicine dropper is in a perpendicular plane. From a half to three fourths of a medicine dropper of the mixture is instilled every one to three hours until relief is achieved. Hot saline or dextrose irrigations are also of some value, though there is less likelihood that they will touch the region of most acute sensitivity, which is usually behind the soft palate on the upper portion of the posterior pharyngeal wall. External compresses as described for acute tonsillitis are also a valuable adjunct, as is the infra-red lamp. Needless to say, the customary generalized supportive measures should be utilized in this condition.

Retropharyngeal Abscess.—The treatment of acute retropharyngeal abscess is essentially a surgical drainage of the abscess. This can obviously be achieved only if a correct diagnosis has been made, a matter not quite as simple as is often believed to be the case, owing to the fact that the abscess is only infrequently directly visible on simple inspection of the throat. So bizarre are the symptoms of retropharyngeal abscess and so frequently are they due to other unrelated conditions that one must exercise all one's diagnostic acumen in order to establish the existence of this condition. It was formerly the custom to drain such abscesses, almost always in infants and children under 3 years of age, with the patient in the upright position, held in the arms of a nurse, and with the physician palpating the abscess with the left index finger carried into the throat or back of the tongue. The knife held in the right hand was then passed along the left index finger and through the anterior wall of the abscess, the patient being then inverted and the evacuated pus allowed to drain out of the mouth. I believe this method is now outmoded and that such drainage without the aid of direct vision is not only unsatisfactory but at times dangerous. I prefer drainage with the patient in the supine position, the head extended somewhat over the end of the table and held in an assistant's hand with the operator sitting at the patient's head, facing his feet. The tongue is elevated by means of an angulated tongue depressor held in the same manner as one would hold a laryngoscope, with direct illumination of the posterior pharyngeal wall with a headlight or with a head mirror. With the anterior wall of the abscess thus exposed, even if located almost behind the larynx, a long-handled knife can be passed directly through it and into the abscess cavity. The presence of pus is at once manifested by a trickle of yellow fluid from the point of incision, thus permitting slow deflation and aspiration of the cavity with suction without escape of fluid into the lower airways. With final emptying of the major part of the abscess cavity, the long-handled hemostat is used to divulge the edges of the wound in much the same manner as in the case of a peritonsillar abscess. This will usually suffice to maintain ample drainage until the abscess cavity has healed and it is rarely necessary to perform secondary incision or drainage. This procedure is particularly useful when the abscess lies at such a low level that it can scarcely be felt with a palpating finger carried through the mouth and over the back of the tongue. Any surgical procedure carried out under direct vision without the necessity for suddenly inverting the patient and with uncertainty as to whether or not the abscess cavity has actually been opened is certainly preferable in my opinion. In this connection it is important to bear in mind the rare but ever present possibility of secondary hemorrhage in connection with retropharyngeal abscess. Such hemorrhages usually occur through extension of the infection in the region of the abscess to the internal carotid artery, with the formation of a pseudo-aneurysm which, periodically weakening the vessel wall, permits intermittent and massive hemorrhages from the throat. Once such a hemorrhage has occurred with temporary cessation it is the part of wisdom to proceed at once with ligation of at least the common carotid and possibly also of the external carotid artery. Ligation of the common carotid artery alone, readily picked up just behind and internal to the anterior

border of the sternomastoid muscle, may be sufficient to check such hemorrhage although it is still possible for blood, by collateral circulation, to descend by way of the external carotid artery and up the internal. If, after ligation of the common carotid, further bleeding occurs, the external may be ligated in the same manner. Ligation of the common carotid alone has the advantage that some blood is still permitted to reach the brain and in this manner it may be possible to avoid the unpleasant cerebral complications incident to cutting off the circulation by way of the internal carotid artery completely. Statistics clearly show that neglect of such a warning primary hemorrhage incident to a retropharyngeal abscess is fraught with the greatest risk to the patient's life.

CHRONIC INFECTIONS OF THE MESOPHARYNX

1. *Tonsillitis.*—There is still no unanimity of clinical opinion as to exactly what constitutes chronic tonsillitis. A history of previous acute attacks and evidence of surface irregularity with scarification of crypts and with hypertrophic or atrophic changes in the lymphoid structures usually are interpreted as evidence of clinical chronicity. The enlargement of adjacent cervical glands, symptoms of toxic absorption and local signs of irritation and vascular congestion are accessory factors which lead to this diagnosis. Once this state of chronicity is definitely established as far as possible, it does not seem to me that any of the palliative forms of therapy such as the various local applications, suction and vacuum cleaning of the tonsil can have much more than psychologic effect. On this basis tonsillectomy appears to be the logical procedure in all but those cases in which surgery is definitely contraindicated, under either general or local anesthesia, because of other factors in the patient's general condition. Operative technic is clearly beyond the scope of this discussion. Suffice it to say that my own preference is for complete surgical excision rather than for periodic diathermic removal of portions of the tonsil with the obvious disadvantages which attend this form of surgery. Where such evidence of chronic infection is found or thought to be due to the tubercle bacillus, tonsillar removal is all the more logical and necessary. Enlargement, induration and fibrosis of a tonsil accompanied by associated lymphadenitis must always bring to mind the possibility of a syphilitic origin. It is quite obvious that where this diagnosis is substantiated by serologic examination or even by microscopic examination of a small section of tissue removed by biopsy, the treatment is that for generalized syphilis in other parts of the body. Surgery would, in my opinion, be contraindicated.

Chronic Pharyngitis.—Chronic low grade inflammation of the posterior pharyngeal wall, both the lower portion visible anteriorly in the mouth and that higher up behind the soft palate, may be provocative of one of the laryngologist's greatest therapeutic dilemmas. Often there is objectively but little sign of pathologic change and only the insistence of the patient leads to attempts to apply any treatment at all. Enlarged local masses of lymphoid tissue can frequently be removed under local anesthesia with punch forceps or lightly coagulated with the actual cautery or diathermy. Application of various astringents such as silver nitrate or a 1 : 6 combination of iodine and glycerin if applied often and vigorously enough will sometimes effect a cure. More recently I have in several instances found multiple small doses of x-rays effective in this condition. I have also had some apparent success with the prescription of an iodine preparation known as lipoiodine, which is taken daily for two or three weeks. Assurance of good bowel elimination, avoidance of cold air in the sleeping room at night, attention to adequate vitamin intake, especially with regard to vitamins A and D, and some consideration of disturbed metabolism requiring thyroid must all be given consideration in chronic pharyngitis. Particularly should an investigation be made of the nose and sinuses lest it be proved later on that a persistent discharge from these, running over the posterior pharyngeal wall, is provoking a constant irritation in this region. Not infrequently the process of atrophic rhinitis may extend to the posterior pharyngeal wall and give rise to the typical dry, glazed crusting on this surface. The present enthusiasm for estrogenic substances in treatment of this condition in the nose is likewise justifiable in the nasopharynx, and topical applications of such drugs as theelin have in my hands been quite successful in improving the general tone and vascularity of the posterior pharyngeal wall.

Foreign Bodies in the Mesopharynx.—The lodgment in the mesopharynx, either at the pharyngeal end of the esophagus in one or the other of the pyriform sinuses or between the epiglottis and the base of the tongue, is a clear indication for the removal of the intruder as the logical therapeutic procedure. Not infrequently this can be managed by means of thorough cocainization of the entire pharyngeal region with 5 to 10 per cent cocaine, applied I believe most efficaciously with a camel's hair brush, and the utilization of a laryngeal mirror in order to visualize the foreign body. Where the latter consists of a thin sliver of chicken bone or fish bone clearly visible in the mirror, it can frequently be easily removed indirectly by means of a curved grasping forceps which, viewed in the mirror, can grasp the foreign body and effect its removal. If simple measures are not immediately effective, if the foreign body proves in any way to be impacted or removal is likely to result in any laryngeal trauma, such indirect methods should at once be abandoned and preparations made for proper endoscopic removal under direct vision. The technic for such operative measures is, I assume, beyond this present consideration of therapy.

Malignant Disease of the Mesopharynx.—Microscopic biopsy is the only reliable method of accurate diagnosis of malignant disease in the mesopharynx, the tonsil being the commonest structure involved. Its diagnosis having been made, x-ray or radium is the present accepted method of therapy in preference to any attempt at surgical excision.

TREATMENT OF LESIONS OF THE HYPOPHARYNX

Infections.—Acute Laryngitis: The primary and most efficacious form of treatment of simple acute laryngitis is absolute and complete vocal rest. Patients, if possible, should not be permitted even to whisper for at least three to five days. The frequently associated tracheitis is best controlled with an appropriate cough medicine containing such hypnotics as codeine or morphine, by inhalation of steam medicated by compound tincture of benzoin and particularly by the intratracheal instillation of soothing, oily medications such as pinoleum or the more complex monochlorphenol. Such medications can, under guidance of the laryngeal mirror, with fre-

quently necessary preliminary cocainization, be instilled with a laryngeal syringe directly onto and between the vocal cords during deep inspiration. I believe that this local treatment, carried out daily for two or three days, can be supplemented by the use at home of an infra-red lamp and also by applications applied about the neck of cotton sheet wadding saturated with isotonic salt solution. With evident improvement in the appearance of the vocal cords, the patient may be permitted to whisper for the ensuing week and then gradually resume the use of his voice, being careful, however, for some time to avoid any extra demand or strain on it. Whenever, particularly in children, the element of obstruction is added to the less serious symptom of hoarseness, the picture at once becomes more complicated and the physician must apply therapeutic measures often much more drastic in nature. Of chief importance is the recognition of such obstruction before it becomes so serious as to constitute an emergency. Simple spasmodic croup will yield to the placement of the patient in a warm moist atmosphere, to the use of expectorants, and particularly to reassurance of both the patient and the parents. Diphtheria would of course be suspected in the presence of any diphtheritic membrane elsewhere in the throat, but absence of the latter does not rule out laryngeal diphtheria and with any evidence to suspect contagion antitoxin would wisely be administered.

Persistence of obstruction, however, must always give rise to the suspicion of some more serious underlying cause such as the disease now commonly known as laryngotracheobronchitis. Any suspicion of the existence of this disease or even a simulating condition, such for instance as foreign body in the larynx or true streptococcic laryngitis, would warrant immediate transfer of the patient to a hospital, where direct laryngoscopic examination could at once be carried out. On the observations attending this procedure depends the application of appropriate therapy. In the presence of diphtheria, membranes can be removed by suction or by forceps and an intubation tube placed within the larynx.

An obvious foreign body can be removed in the manner best adapted to its nature and, in the case of laryngotracheobronchitis, a decision can be made after direct examination of the larynx as to the desirability of tracheotomy. In spite of the immediate relief afforded by it, intubation as a general rule is not satisfactory in laryngotracheobronchitis and its employment will only lead to further difficulty later on. The value of sulfanilamide or sulfapyridine has not yet been clearly established in these more severe forms of laryngeal infection. My own experience with sulfapyridine has seemed to indicate its value as a therapeutic adjunct but only in conjunction with complete relief of the laryngeal obstruction and never to be relied on in the presence of severe dyspnea. Of the utmost importance in the care of such patients following tracheotomy is the humidification of the patient's room by some form of mechanical humidifier capable of instituting, in as small a room as possible, a wet and dry bulb thermometer humidity of as near 100 per cent as possible. By this means one may be most nearly assured of preventing the dreaded crust formation in the lower portions of the respiratory tract which has proved such a serious factor in the care of patients afflicted with laryngotracheobronchitis.

Chronic Laryngitis: Chronic laryngitis, incident usually to long-standing abuse of the voice, is to be treated on somewhat the same line as acute laryngitis but over a longer period of time and with some regard for the necessity of the patient's carrying on to some extent his normal activity. He should, if possible, be put on a whispering regimen for anywhere from one to three months. Local instillations into the larynx of soothing medications by means of the laryngeal syringe have already been described. Avoidance of laryngeal irritation incident to smoking, to the use of alcohol and to dusty and irritating atmospheres is important. If the original disability is the result of improper use of the voice, particularly in speakers and singers, educational factors must enter the picture and the patient, if possible, taught proper use of his voice. Underlying and predisposing causes which may arise in other parts of the body system must be given attention, particularly the nose and nasal sinuses, as being a primary cause of secondary chronic laryngeal irritation. Obviously no patient can safely be assumed to have simple chronic laryngitis unless other simulating conditions in the larynx have been ruled out by careful and reliable laryngoscopic examination. Where such examination shows the presence of pus and accumulated dry secretions, consideration must be given to the similarity of this condition with that of atrophic pharyngitis and rhinitis and to the utilization by swabbing in the larynx of one of the various estrogenic substances which have proved so effective in other parts of the respiratory tract.

Laryngeal Tuberculosis: This disease represents an instance of the importance of accurate laryngologic examination with the laryngeal mirror as being the only means by which differentiation can be made in many chronic laryngeal lesions producing hoarseness as almost the only symptom. There is no typical laryngeal picture for tuberculosis and only experience will lead gradually to ability to make a correct estimate of the laryngeal picture. An antituberculosis regimen is obviously essential, since in almost every instance of laryngeal tuberculosis the patient will be found to be suffering also from pulmonary tuberculosis. Locally my preference is for puncture cauterization of the tuberculous lesions in the larynx performed by means of direct laryngoscopy. Marked dysphagia may be relieved by injection or section of the superior laryngeal nerve.

The same importance of accurate diagnosis also obtains in the case of hoarseness due to syphilitic lesions of the larynx. The clinical appearances may be still more bizarre even than those of tuberculosis and there is no diagnostic pattern on which one can definitely rely. Serologic tests will of course lend credence to this diagnosis, the treatment being that of syphilis of other parts of the body.

Tumors of the Hypopharynx.—The treatment of tumors, either benign or malignant, in the hypopharynx, particularly in the larynx, depends to a considerable extent on the nature of the new growth. Many times simple surgical excision will suffice whereas in other instances, particularly in advanced malignant disease, the most radical forms of surgery or intensive irradiation may be appropriate. Such work is now falling more and more into the hands of those who take a special interest in this subject and who by extensive experience have developed a special skill for such work. For the average laryngologist it is of especial importance that by early and frequent indirect laryngoscopic examination he be alert to detect the presence of any incipient new growth before it advances to the stage requiring

radical treatment. This is of particular importance in the case of cancer of the larynx, in which early diagnosis is so important from the standpoint of the patient's future well-being. Suspicion of a new growth in the larynx will frequently warrant substantiation by biopsy carried out by means of direct laryngoscopy, on the results of which will depend the character of subsequent surgical treatment.

Foreign Bodies in the Hypopharynx.—Foreign bodies in the pharyngeal end of the esophagus are usually not visible on direct inspection. Much will depend on the history given by the patient, since this will often reveal the nature of the foreign body. From a therapeutic standpoint removal is, of course, indicated, usually by the direct esophagoscopic method. The same is true of foreign bodies in the larynx, but, since these so frequently occur in children and since there is often no direct history of aspiration, the true nature of the obstruction may not at once be evident and for this reason inappropriate therapy, such as the administration of diphtheria antitoxin, may erroneously be applied. The importance of relief of such laryngeal obstruction pending removal of the foreign body has already been stressed in connection with inflammatory laryngeal obstruction.

Throat inflammations complicating systemic disease must frequently come under observation, particularly of the general practitioner. Prominent among these is the sore throat incidental to scarlet fever and that seen in mononucleosis and agranulocytic angina. The blood picture is most important in diagnosis and the treatment is that of the underlying condition.

Laryngeal Paralyses: The treatment of hoarseness due to various forms of laryngeal paralysis depends entirely on the etiologic factor. Trauma to the recurrent laryngeal nerve or compression of this nerve by pathologic conditions within the thorax must be treated entirely from the etiologic standpoint. Where such paralyses entail severe obstruction to breathing, tracheotomy may be the only feasible method of at least temporary relief.

Central nervous system disease producing such paralyses often entails many diagnostic difficulties before intelligent treatment can be applied. Weakness of the approximating laryngeal muscles and certain forms of hysteria producing weakness or fatigue of the voice must frequently be treated from a psychologic standpoint and by instruction in proper use of the voice. Almost all therapy is dependent first of all on careful and intelligent mirror examination of the larynx.

319 Longwood Avenue.

Heat Stroke and Heat Prostration.—Occasionally in periods of extreme heat and humidity great numbers of people may be prostrated, as though the affection were epidemic. The mildest effect (heat prostration) consists in headache, moderate rise in temperature, pains in back and limbs, and extreme exhaustion. More severe is the asphyctic form, in which great dyspnea and cyanosis, with delirium or unconsciousness, are added to these symptoms. Still more severe, and very frequently fatal, is the hyperpyretic type, in which unconsciousness and collapse come on suddenly, or after several days of vague premonitory symptoms. There are convulsions, delirium, or profound coma, with shallow and grasping or very deep respiration, and finally failure and stoppage of the heart. The skin, at first covered with sweat, becomes hot and dry, and the temperature rises to phenomenal levels.—MacCallum, W. G.: A Textbook of Pathology, Philadelphia, W. B. Saunders Company, 1940.

TREATMENT OF ACUTE AND CHRONIC SUPPURATIVE OTITIS MEDIA

HAROLD I. LILLIE, M.D.
ROCHESTER, MINN.

Not so long ago some one asked "What is wrong with present day methods of treating otitis media?" The question startled me. Complacent in the thought that patients seemed to be doing well under the management being used, I wondered if the question really meant "Why can we not control the complications of otitis media?" It must immediately be realized that, once an infection has occurred within the middle ear, it can be assumed that the infection has extended to the appendages, because of the very nature of the anatomic arrangement of the structures. The only portion of the tract that can be treated directly is the middle ear. Assuming that the diagnosis of acute otitis is made correctly, what should be done?

First of all, the serious nature of the disease must not be minimized. The patient should be hospitalized and confined to bed in a nearly upright position. The room should be warm and moist. Appropriate treatment of any respiratory infection should be instituted and it must be insisted on that the patient not blow the nose. Hot moist dressings applied over the ear and mastoid are effective in ameliorating symptoms. Roentgenologic treatment of the ear in the early stages of the condition has been found to afford considerable relief of pain for many patients.

There seems to be no unanimity of opinion regarding the indications for and usage of myringotomy in suppurative otitis media. Some observers say they perform myringotomy on all patients at the first sign of involvement in the middle ear. Others use myringotomy when severe pain is complained of, even though no bulging of the drum is present. Others prefer to await the presence of classic signs such as (1) fever, (2) severe pain, (3) redness and (4) bulging. That the composite condition must be individualized and appropriate treatment used is the consensus. If the first signs in the ear are those referable to tubotympanitis, institution of palliative measures certainly seems logical, whereas, if all signs are present, myringotomy is indicated. If the surgeon is undecided, he may use myringotomy without reflection on his diagnostic ability or judgment. If myringotomy is deferred, any of the standard medicaments may be used in the ear. In addition to the effect it has on the pain, the use of a medicament helps partially to sterilize the canal. During this period other necessary examinations may be carried out. If myringotomy is decided on as a primary method of treatment, the operation is best performed under general anesthesia. An adequate incision of the tympanic membrane, and not merely a puncture wound, should be insisted on. The posterior quadrant of the tympanic membrane is the most suitable site for myringotomy. It is too much to expect that myringotomy will prevent surgical mastoiditis in every instance, and relatives of the patient should be so informed. Myringotomy may help, but the underlying pathologic processes may not be confined to the middle ear and conditions may not be suitable for drainage of the adjacent infected structures. Myringotomy may be expected to relieve the intense pain

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caused by the effects of pressure of fluid confined in the middle ear; also it may be noticed in children that elevated temperatures may subside after performance of myringotomy. It is important that cultures of the discharge from the middle ear be taken and the infecting organism be identified, because this knowledge may be of great importance in the management of the disease. However, the importance of the organism found may easily be overemphasized.

It is my opinion that it is best not to resort to irrigations of the auditory canal if the discharge from the ear is free. Irrigation of the auditory canal should not be done until the discharge becomes thick and purulent. Hot moist compresses should be kept applied over the ear and the mastoid process because their use seems to encourage free discharge.

Careful observation of body temperature, pulse and respiration and the use of laboratory tests are essential because the progress of the patient may best be followed if these observations are correlated. I have always felt that the general appearance and demeanor of the patient are good indexes of the general condition. Blood tests are particularly important, especially the estimation of the hemoglobin percentage and culture of the blood. Tests made daily are not necessary. Small children are unduly antagonized and made more difficult to manage and are less cooperative if tests are made daily.

The use of sulfanilamide is rather general at present, and the literature is filled with strikingly successful instances of its use. On the other hand, it is equally true that warnings are being sounded by very competent observers to the effect that the use of the drug may seriously mask the signs and symptoms of actual underlying pathologic processes. Patients receiving this drug must be hospitalized to insure adequate observation. Recognition of a new clinical picture may need to be learned if the use of sulfanilamide is insisted on. It seems to have been well established that the drug and its derivatives have little beneficial effect in actual infections of the bone but that they are effective against infections involving the soft tissues. If infection of the blood stream or extension of the infection into the intracranial structures is present, the original infection in the ear and mastoid cells must be eliminated and sulfanilamide or its derivatives should be used as an adjunct therapeutic agent.

It must be decided on which type of mastoiditis is present. If osteothrombotic mastoiditis is present, the discharge from the ear will be thin and the roentgenogram usually will show a small cell variety of mastoid process with little or no changes suggestive of destruction. Earlier evidence of complications as manifested by high fever, nephritis and a decreasing percentage of the hemoglobin may be expected. Evidence of invasion of the blood stream may occur in this type of disease even after the discharge from the ear has ceased.

If the pathologic process is suppurative, the discharge from the ear will be purulent and the roentgenogram will show evidence of destruction of the cellular structures. The blood count more generally shows an increase in the number of leukocytes, and the decrease in the percentage of the hemoglobin is not so striking. Complications, because of the very nature of the disease, occur later in the course.

When has resolution taken place? Many factors must be considered. The general appearance and demeanor of the patient are good indexes. If the patient continues to look and act as if he were ill, even though the ear appears to be doing well, the physician should be suspicious of impending complications. If the patient looks and acts as if he were normal, even though the ear is still discharging, it is rather good evidence that no complication is impending. There is no set period for final resolution to be established. Every patient seems to constitute a law unto himself. Also there is not a set time at which surgical intervention is indicated; it depends entirely on the nature of the pathologic process and the good judgment of the surgeon. The patient should be observed throughout the course of the disease if chronic suppurative otitis is to be avoided.

Too often for accurate comprehension, chronic otitis media is dealt with in the abstract. To speak in generalities about a disease of such variable clinical characteristics as chronic otitis media is too confusing. Dividing chronic otitis media, for purposes of discussion, into nondangerous and dangerous groups is not sufficient for clearness of immediate perception of the actual pathologic process under discussion. Because clinicians must correlate all the facts in a given case to arrive at some worth-while conclusion, it is important to realize that clinical problems cannot be reduced to the status of mathematical precision. To rely on statistics is a dangerous philosophy in the everyday practice of medicine. One famous aural surgeon said that all ears in which a chronic condition is present should be operated on. That rather obviously is a philosophy which cannot be subscribed to by experienced observers; it is as wrong as it would be to say that there is no need to operate in any case of chronic otitis media. Recently I heard an otologist say that he had never failed to cure what he called a "chronic ear" with a certain combination of drugs in solution. When he was asked what types of "chronic ear" he meant, he said that all types had responded to the treatment. It is such statements as this one that make for confusion.

In general, it can be said that the treatment of chronic suppurative otitis media should be carried out by an otologist. The frequency of treatment is entirely dependent on the nature of the disease. Treatment must be persistent, well directed and meticulous. To wash out the discharge with aqueous solutions is not good treatment because the effect of water is to soften epithelium and cause increased desquamation in addition to producing a very suitable condition for the growth of bacteria. For these reasons the use of alcoholic solutions is preferable. Manipulation with instruments may be necessary to remove collections of desquamated material, aural polyps causing obstruction to underlying cavities or recesses, and to remove exuberant granulation tissue. At the first visit of the patient it may not be possible for the otologist to do all he would like to do because the patient may be too apprehensive. As confidence is gained, more can be accomplished. From an economic standpoint, persistence in local treatment may be favorable from the patient's point of view. If the treatment is not entirely successful and if surgical intervention is decided on, it will be found that the local treatment has prepared the field well and that the period of postoperative treatment will be much less prolonged for that reason. Treatment at home under the direction of the otologist is not effective until the pathologic process has been brought well under control.

FOUR CLINICAL TYPES OF CHRONIC SUPPURATIVE OTITIS

Patients affected with chronic suppurative otitis media may be divided clinically into four groups. For purposes of discussion the following grouping will afford

a rather clearly defined mental picture of a given case so that any otologist should know at once what pathologic condition actually is being discussed. The clinical management of patients in each group is based on the recognition of the underlying pathologic process. Time does not permit a comprehensive exposition of all the factors involved.

GROUP 1.—Patients comprising this group include those in whom antero-inferior perforations of the tympanic membrane overlie the orifice of the eustachian tube. Few subjective symptoms are complained of other than discharge from the ear. The discharge usually is increased in the presence of head colds. The discharge is mucopurulent in character and is without odor unless care of the ear has been neglected and unless the detritus has undergone saprophytic infection. The treatment is directed at the nasopharynx, eustachian tube and middle ear. The patient's blowing of his nose should be stopped, or else he should be instructed in the proper physiologic method of blowing the nose.

GROUP 2.—Included in this group are those patients who may have had considerable central loss of the tympanic membrane and show evidence of definite pathologic change in the membrane covering the promontory. Hyperplasia and granulation tissue are frequently encountered. In addition, the malleus may be involved by a necrotic process. However, there is little evidence of pathologic changes in the attic. When the infection is controlled, the promontory becomes covered with epithelium if the periosteum has not been too seriously damaged by disease. Patients who have this condition respond well to local treatment. Alcoholic solutions to which certain antiseptic agents are added and antiseptic powders are the usual agents employed. Drying with a stream of air is used. Zinc ionization is said to be useful in this particular type of condition.

GROUP 3.—No destruction in the tympanic membrane may be evident in this group of patients but defects into the attic of various sizes and situation are seen. However, partial or total destruction of the tympanic membrane may be present in addition to the lesion in the attic. In many instances the tense portion of the tympanic membrane may be intact. Since the perforation present is of the marginal type, formation of cholesteatoma can be expected. In addition, the occurrence of necrosis of bone is not unusual. From the defect in the attic, foul smelling pus may be discharged and visible evidence of cholesteatoma is likely to be present. Subjective symptoms, in addition to the malodorous discharge, such as pain or headache and mild attacks of vertigo, may be complained of by the patient. The hearing may be but slightly affected. The condition of patients in this group can be considered to be "borderline surgical." The effect of treatment will depend on the size of the defect into the attic and mastoid region. If the defect is large enough to permit instrumentation and direct treatment, the result may be very satisfactory and, if there are no symptoms of impending complication, treatment may be persisted in. A surprising number of patients in this group have remained well. If surgical intervention becomes necessary, the modified radical mastoid operation can be employed satisfactorily in those cases in which the tympanic membrane has not been destroyed by the disease. It is in this group that natural reparative processes may fashion a cavity similar to that for which the surgeon would hope if he had performed an adequate operation.

GROUP 4.—In addition to the pathologic processes discussed in group 3, those patients whose condition classifies them in group 4 present definite evidence of serious pathologic changes with or without symptoms or impending serious complication. The condition of such patients is surgical and demands adequate surgical intervention at the earliest convenience because there is little likelihood that treatment will affect favorably the condition and, what is more important, delay in instituting surgical intervention is fraught with great danger to the life of the patient.

THE TREATMENT OF ACUTE AND CHRONIC SINUSITIS

J. MACKENZIE BROWN, M.D.
LOS ANGELES

The treatment of sinusitis cannot be prescribed in hard and fast rules. Individualism in therapy is as essential here as in any other branch of medicine. The following general rules are given but may be adjusted to the individual needs of the patient:

THE GENERAL TREATMENT OF ACUTE PANSINUSITIS

In acute pansinusitis the patient should be kept in bed in a room with a warm even temperature day and night. Nasal shrinkage should be accomplished with either ephedrine or neosynephrine in warm physiologic solution of sodium chloride. The spray should be repeated in from ten to fifteen minutes in order to reach the superior nasal regions. In fulminating cases with threatening orbital complications, cocaine or epinephrine may have to be used. Even though the secondary reaction from the use of these drugs may be marked, the added shrinkage obtained may cause the offending sinus to evacuate itself and prevent complications.

In small children it is preferable to use the dropper method. The child is placed in the recumbent position, the head fully extended over the edge of the bed, and about three drops of the solution put into the nose. This should be repeated in from ten to fifteen minutes.

Relief of pain in the acute stage is obtained by the use of drugs and physical measures. Acetylsalicylic acid and codeine should be given as often as necessary. Heat or cold may be used in the form of local applications, according to individual preference. Heat may be utilized in any one of many ways. I am convinced, however, that it is the heat alone that gives relief, and not the method through which it is used.

In severe infections, chemotherapy and immunotherapy may be indicated. In beta-streptococcic sinusitis, sulfanilamide is advised. In pneumococcic sinusitis, sulfapyridine, and in staphylococcic sinusitis, the newer derivative sulfathiazole has been of value experimentally. In cases of streptococcic sinusitis in which sulfanilamide is not well tolerated or ineffective, convalescent scarlet fever serum may be used with great benefit.

In the subacute phase of pansinusitis, when the patient is afebrile and usually free from pain, after thorough nasal shrinkage the nose is gently irrigated with warm Ringer's solution to remove accumulated mucopus, or a displacement treatment (Proetz) is done. I have found these to be important measures in ridding the patient of the infection. In this stage a warm climate

From the Department of Otolaryngology, the University of Southern California School of Medicine.

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is of great value. It is important, however, that these patients keep their rooms warm at night, since the temperature may frequently drop from a high level in the day to a low one at night.

ACUTE MAXILLARY SINUSITIS

In the acute stage of maxillary sinusitis, irrigation of the antrum is contraindicated. The lining membrane of the antrum is hyperemic and markedly edematous; therefore no benefit is accomplished by irrigation, and harm may result.

In the subacute stage, when exudation is the prominent pathologic process, the antrum usually contains a considerable quantity of thick pus. If the retention of this pus produces persistent pain and discomfort, in spite of shrinkage, irrigation of the antrum is indicated. The antrum may be irrigated through either the inferior or the middle meatus. The choice of route will depend on the practice and preference of the individual surgeon as well as on the anatomy of the nose. Such an irrigation will remove a large amount of thick pus, which would find exit only with great difficulty or not at all through the natural opening, if untreated.

ACUTE MAXILLARY SINUSITIS DUE TO DENTAL PATHOLOGIC CONDITIONS

Cases of acute maxillary sinusitis due to dental pathologic conditions are definitely not secondary to any nasal infection and are confined to the antrum alone.

Without Extraction.—Acute maxillary sinusitis due to dental infection not following extraction is uncommon. The very earliest stage is a short inflammatory phase. The next stage, that of exudation, is the one commonly seen when symptoms first appear. As soon as the diagnosis is established, the antrum should be irrigated. At a later date, when the acute process has subsided, the offending dental pathologic condition should be removed. After this the irrigations should be continued until the infection subsides.

Following Dental Extraction.—If an opening exists between the antrum and the tooth socket, the antrum is irrigated through this opening as soon as the sinusitis is recognized. If no opening exists between the tooth socket and the antrum, irrigation should be done through the nose.

ACUTE ETHMOIDITIS

Acute ethmoiditis is most frequently associated with infection of the other sinuses and will usually respond to the general treatment outlined. If orbital extension occurs, three types may be observed: first, simple edema of the orbit; second, periorbital abscess, and third, the less common, true orbital abscess.

Simple orbital edema will usually respond to intensive nasal shrinkage. If orbital induration with fixation of the eyeball is present, it is an indication for surgical intervention. An external approach is advised and should endeavor only to allow adequate drainage but should not include a complete exenteration of the ethmoid cells. If the latter procedure is necessary, it should be done at a later date, after the subsidence of the acute process.

ACUTE SPHENOIDITIS

During the acute stage of sphenoiditis only general treatment should be carried out.

In the subacute stage, after recession of nasal congestion, the sphenoid sinus may be irrigated through the ostium. In children the persistence of an unexplained fever following an acute sinusitis should suggest the possibility of a sphenoiditis.

ACUTE FRONTAL SINUSITIS

Acute frontal sinusitis should be treated first by intensive shrinkage. If ephedrine or neosynephrine does not suffice, epinephrine and cocaine should be used. They may be employed in the form of pledgets placed in the middle meatus. Even though epinephrine has a very marked reaction from one to two hours after its use, the immediate shrinkage obtained may be sufficient to initiate drainage of the sinus.

Early external drainage of the frontal sinus should be considered if, in spite of intensive shrinkage, persistent pain and tenderness with or without swelling of the upper lid or supra-orbital region is present. If the sinusitis is the result of swimming, external drainage should be considered earlier than otherwise. The external drainage should be confined to a simple trephine in the inner third of the floor of the sinus.

It is imperative that an x-ray examination of the frontal sinus should be made in order to determine the presence and dimensions of the sinus before surgery. With the external opening a more adequate drainage is obtained without the dangers of traumatizing the acutely inflamed nasal mucosa. If meningeal signs become apparent, the posterior plate should be removed at once, or if signs of osteomyelitis make their appearance, in spite of adequate external drainage, more extensive surgical procedures on the frontal bone should be employed without delay.

PRINCIPLES OF TREATMENT OF CHRONIC SINUSITIS

In chronic sinusitis a general physical examination of the patient is of the utmost importance as well as the routine special examinations, including adequate radiography. Factors of importance include endocrine dyscrasia, excessive use of tobacco and alcohol, and vitamin and other dietary deficiencies.

It should be kept in mind that certain cases of chronic sinusitis are basically of an allergic nature with superimposed pyogenic infection. Unnecessary surgery may be avoided by investigation of this angle.

If septal deflections are present which may obstruct sinus drainage, these should be corrected. Infected tonsils and adenoids should be removed, in order to prevent upper respiratory infections and recurrent sinusitis. In children it is not uncommon for an acute exacerbation of a chronic sinusitis to follow tonsillectomy. The removal of tonsils and adenoids in children is frequently all that is necessary to clear the sinus infection.

CHRONIC MAXILLARY SINUSITIS

In chronic maxillary sinusitis, displacement treatments may be tried but irrigation of the antrum is suggested. If the infection persists after a reasonable trial with irrigations, an antrum window is indicated. In making the antrum window I would suggest that the opening be made far forward and low on the floor and not too far back, and that it be done with biting forceps or sharp instruments in order that the edges of the opening may not be unduly traumatized. There is less probability of excessive granulation if biting forceps are used instead of rasps. If the opening is made too far back, there is danger of hemorrhage from a branch of the sphenopalatine artery. If the opening is made too far back and high up, the attachment of the inferior turbinate is weakened with a subsequent in-drawing of the turbinate. The formation of adhesions follows with the ultimate closure of the window.

In the chronic purulent type without polyposis, the antrum window has been successful in a high percentage of cases.

In the chronic hyperplastic type with polyposis, allergy must be considered as the underlying etiologic factor and treated. If symptoms persist and especially if there is suppuration in addition to the hyperplasia and polyposis, a Caldwell-Luc operation is indicated. In my experience an antrum window is insufficient in these cases and in order to get a satisfactory result the hyperplastic membrane must be completely removed.

In children a window is occasionally needed, rarely a Caldwell-Luc operation.

MAXILLARY SINUSITIS DUE TO DENTAL PATHOLOGIC CONDITIONS

For maxillary sinusitis due to dental pathologic conditions the antrum should be irrigated several times. If the infection persists, a window should be made. If the window does not suffice, a Caldwell-Luc operation is indicated because of the occasional presence of bone necrosis at the site of infection, especially in post-extraction cases.

When a fistula is present it should be closed by curettage or, if large, a plastic operation should be done at the same time as the Caldwell-Luc operation.

CHRONIC ETHMOIDITIS

Chronic ethmoiditis is frequently associated with other sinusitis. Many cases will clear after the elimination of antral disease. A large percentage will respond to a series of displacement treatments. If these measures are unsuccessful, an intranasal ethmoidectomy may be necessary. The intranasal approach may be done first or the ethmoid may be attacked in a transantral approach if an antrum operation is to be done at the same time. The middle turbinate should be preserved whenever possible. If the disease persists in spite of intranasal surgery, an external operation may become necessary to exenterate the completely infected cells.

CHRONIC SPHENOIDITIS

In chronic sphenoiditis the displacement treatment or irrigation through the natural opening is successful in a large number of cases. If this does not suffice, an intranasal opening into the sphenoid may then be indicated. The transantral route may be employed when the ethmoid and sphenoid are involved with the antrum.

CHRONIC FRONTAL SINUSITIS

Except in the presence of complications, the intranasal approach is preferred for chronic frontal sinusitis.

If chronic maxillary or ethmoid sinusitis is present, it should receive consideration at the same time.

If a frontal sinus infection is present alone, an intranasal anterior ethmoidectomy (Mosher) should be tried first. The remaining portion of the frontonasal duct is not interfered with.

An external operation is indicated in the presence of (1) a fistula, (2) severe pain and headache of frontal sinus origin, (3) signs of intracranial invasion or (4) signs of osteomyelitis. In the operation, no vestige of mucosa should be left and no bone left uncovered by periosteum.

SUMMARY

1. A careful general investigation of the patient's physical condition is advised in all types of sinusitis. This may disclose important underlying etiologic factors that may avert unnecessary local treatment or surgery.

2. No surgical treatment should be undertaken during the acute stage unless urgency demands intervention.

3. Conservation of the nasal mucosa is essential in all sinus surgery.

4. The early recognition of serious complications with the proper treatment is imperative.

5. Adequate drainage in both acute and chronic sinusitis is the greatest essential of treatment.

1136 West Sixth Street.

ROENTGEN SIGNS OF MASTOIDITIS AND ITS COMPLICATIONS

VINCENT C. JOHNSON, M.D.

ANN ARBOR, MICH.

Accurate and thorough roentgenologic examination in search of mastoid disease calls for careful and ingenious technic, since not only the mastoid process but the squamous and petrous portions of the temporal bone may be involved. As it is quite impossible to demonstrate all these structures sufficiently well by means of any one projection, multiple exposures, each designed to portray some particular feature of the temporal bone, are essential.

Of the numerous projections that have been described and advocated, four have been selected on the basis of experience for employment in routine mastoid examination at the University Hospital. Beginning with the standard oblique lateral projection of Law, there have been added the oblique postero-anterior projection described by Stenvers, the fronto-occipital projection of Towne and, more recently, an axial projection of the base of the skull in the mentovertical direction. To enhance further the diagnostic value of the roentgenograms thus obtained, stereoscopic technic is employed throughout, and in all cases both temporal bones are examined. A head table of the type devised at the University of Chicago by Hodges [1] greatly facilitates positioning and fixation of the patient's head and accurate angulation of the x-ray beam. Even with a target-film distance of 36 inches it is desirable to use the smallest focal spot available to preserve the greatest possible degree of detail.

It may be argued with entire justification that in many cases it is unnecessary to prepare twelve roentgenograms to determine whether or not suspected mastoid disease exists. As a matter of fact it is nearly always true that demonstrable lesions, when they do occur, could have been shown perfectly well with but a single exposure or a single stereoscopic pair. Unfortunately one never knows at the time of the original examination which projection will prove to be the best, and this is particularly true when situations which complicate mastoiditis are encountered.

Once prepared, roentgenograms of the temporal bones are difficult to interpret because of the detailed osseous anatomy which they represent. Variations from the expected normal appearance, either unilateral or bilateral, may result from vagaries of development or acquired disease. Since the successful management of mastoiditis may depend to a considerable extent on

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1. Hodges, P. C.: An Apparatus for Stereoscopic Roentgenography of the Skull, Am. J. Roentgenol. **42**: 921-929 (Dec.) 1939.

exact anatomic relationships, it is well for the examiner to provide the referring otologist with a complete description of each mastoid as he sees it, carefully calling attention to circumstances which are unusual.

Mastoid cellularity varies through a wide range from the complete absence of recognizable cells to extensive pneumatization of all portions of the temporal bone. Deviations from the rule of bilateral symmetry often lead the examiner at once to the recognition of pathologic changes of significance, though it must be remembered that clinically unimportant developmental differences will occasionally be found and, further, that middle ear disease active during the period of cellular development can be the cause of asymmetry.

A completely acellular mastoid is easily recognized by its great relative density and its contracted appearance. When the opposite mastoid is normally pneumatized these features seem accentuated. The mastoid process is underdeveloped while the groove for the sigmoid sinus usually is prominent and in close proximity to the posterior wall of the auditory canal. The absence of mastoid cells when caused by chronic inflammation is associated with bone sclerosis. About all that the roentgenologist can do in such cases is to report the extent of the process and gage the relative density of bone in the diseased area. It is very important that search be made for included zones of bone destruction, which in the presence of extensive sclerosis are recognized with difficulty. The area of decreased density produced by the knee of the sigmoid groove as seen in the occipital view may easily be mistaken for evidence of bone destruction.

Cells found in the temporal bone may vary from a very few, usually in the antral and periantral area, to extreme pneumatization of all areas including the squamosal and petrous portions. It is impossible to identify all cells in the petrous bone. However, if all available films are examined carefully it should be possible to determine with fair accuracy the number of cells in the regions of the labyrinth, eustachian tube, carotid canal and apex. The importance of accurately localizing all visible cells is obvious, since inflammatory disease of any section of the mastoid may extend to all pneumatized areas. The roentgenogram may be used also to determine the approximate thickness of bone which surrounds these cells. It is particularly important to note the thickness of the tegmen tympani and the lateral cortex overlying cells developed in the mastoid process or the zygomatic area. Such information may aid in determining whether surgical intervention is necessary to avoid extension of infections by perforation of thin bony walls in these areas.

The roentgenologic signs of diseased mastoid cells are well known. Early suppuration results in simple clouding, to be followed in more advanced stages by recognizable absorption of cell walls. If untreated, the process may progress to the formation of large bone abscesses. If the infection subsides, varying degrees of bone regeneration will occur during the process of repair, causing increased thickness and density of cell walls. More advanced stages of suppurative disease usually require surgical exenteration of diseased cells and the establishment of drainage.

The roentgen examination may be of further assistance when it is necessary to plan operative methods of treatment by demonstrating the position and caliber of the sigmoid sinus. The groove formed in the temporal bone by this sinus is very distinct in the mastoid of limited cellular development and in pneumatic mastoids when the cells are distinctly clouded. The roentgenologist can and should describe the position of this sinus in every report. It may curve far laterally, occupying a very superficial position at the external wall, or course anteriorly to approximate closely the posterior wall of the canal. Troublesome hemorrhage at operation may be avoided if the position and caliber of the emissary vein can be determined and reported. Occasionally it is possible to postulate unilateral underdevelopment of the lateral sinus and describe the usual evidence of contralateral venous dilatation. Forewarning of this sort may on occasion explain clinical signs of unexpected gravity when the side of principal venous drainage becomes occluded by thrombosis.

It is a wise move to reexamine the mastoid after surgical intervention to provide graphic evidence regarding the completeness of the operation and the location and status of surgically inaccessible cells which may come under suspicion at a later date. It is sometimes desirable to observe repeatedly the mastoid that has been operated on to detect at the earliest possible moment dangerous spread of disease from the operative area into the petrous pyramid. It is seldom possible to obtain an accurate account of the surgical procedure employed in the case of patients previously operated on who present themselves for treatment with signs of continued or recurrent disease. In such cases roentgenographic examination may explain the persistence of symptoms on the basis of residual diseased cells.

Situations capable of complicating the management of mastoiditis are numerous and diversified. Some of these can be recognized and evaluated to advantage on the basis of roentgen examinations. In others it is unwise to expect assistance from this method of study. Complications closely localized to the temporal bone and recognizable directly on roentgen examination are relatively few.

MacMillan [2] reports microscopic evidence of cholesteatoma in 50 per cent of cases coming to surgery for chronic suppurative otitis media. Bone destruction surrounding these lesions was recognized preoperatively with the use of the Law projection in 45 per cent, while with the additional aid of the occipital projection the percentage of preoperative diagnosis of cholesteatoma was increased to 68 per cent.

When present, cholesteatoma fairly constitutes a complication of mastoiditis because of the tendency of this form of lesion to expand progressively, producing more and more extensive bone destruction. True or primary cholesteatomas are rarely encountered. The type commonly encountered within the temporal bone consists of seminecrotic squamous epithelium and its products, presumably reaching the middle ear by extension through a perforation in the tympanic membrane. These lesions are usually found in cases of chronic middle ear disease in association with underdevelopment of the mastoid.

The roentgen signs of the bone destruction produced by these lesions are usually very distinct. Characteristically the bone defect is smoothly rounded and rimmed with a wall of sclerotic bone. Destruction of this type is most commonly encountered in the mastoid antrum or extending laterally from this region. Less commonly progressive destruction may be directed medially, sometimes producing recognizable alteration of the labyrinth. There is no uniformity in the matter of size, since this depends on the rate and duration of growth.

2. MacMillan, A. S.: Cholesteatoma in Chronic Otitis Media, Am. J. Roentgenol. **36:** 747-750 (Dec.) 1936.

Complications associated with suppurative mastoiditis when pneumatization is extensive which results in bone perforation with the extension of infection into neighboring soft tissues are as a rule observed to better advantage on clinical inspection than by means of roentgen examination. Such perforations are to be looked for in the zygomatic region, in the area immediately posterior to the ear and in the form of Bezold's abscess. Occasionally cortical destruction of the mastoid can be identified radiographically, although ordinarily necrosis of cell walls in the immediate vicinity rather than the actual perforation itself is all that one can find. Perisinal abscess, when sufficiently extensive, may be detected on the basis of neighboring bone destruction along the course of the sigmoid sinus.

The serious complication of petrositis has attracted a good deal of attention by otologists and roentgenologists in recent years. Many articles devoted to the discussion of normal relationships and observed developmental variations of the petrous portion of the temporal bone, as well as roentgen evidences of disease, have appeared in the literature. Roentgen examination is usually requested for the purpose of confirming suspicions based on clinical signs with the hope that perhaps some idea of the extent of the process may be gained.

By general usage, petrositis has come to mean inflammatory disease involving that part of the petrous bone which lies medial and anterior to the arcuate eminence and the superior semicircular canal. This portion of the temporal bone consists of cancellous or spongy bone containing marrow and a variable number of air containing cells. The spongy portion of the bone is encased by a dense cortical layer. The occurrence of air cells within the petrous bone has been variously quoted at from 11 to 35 per cent of all observed cases. Fowler and Swenson [3] were able to identify at least a few cells in the petrous bones of all of 369 adult patients whom they studied. In only twelve of these would they report extensive pneumatization. In poorly pneumatized bones some cells were found in the peritubal area, above the jugular bulb and in the epitympanum. Cellularity of the petrous process is usually proportionate to the number of cells found in the mastoid process. Roentgen signs of suppurative disease involving cells within the petrous portion of the temporal bone do not vary from those which are useful in estimating the status of the mastoid process, although signs of clouding and cell wall destruction are as a rule recognized with greater difficulty. The belief is generally accepted that dissemination of mastoid disease in the petrous bone is directly dependent on cellularity in this area. Once extension has occurred, however, true osteomyelitis may develop in the marrow-containing portion of the petrous pyramid. Under these circumstances bone destruction may extend well beyond the site of recognizable cells if the infection is severe. In more indolent infections, sclerosis may develop far into the body of the petrous bone. Roentgen signs of petrositis can be considered of value only when they confirm clinical manifestations of such disease or when they are helpful in determining the most desirable method of surgical treatment.

Brain abscess complicating suppurative mastoiditis may exist in the absence of telltale roentgen signs. Occasionally displacement of calcification within the choroid plexus and pineal body has proved helpful in detecting the presence of intracranial mass to one or the other side of the midline. At least one instance of a brain abscess containing gas produced by the infecting organism and directly associated with mastoid disease has been reported. In this case the presence of the air bubble resulted in localization following x-ray examination. Once localized, the surgical treatment of brain abscess can be facilitated by the injection of opaque contrast mediums directly into the cavity by way of an exploring needle. After such injection roentgen examination offers valuable information regarding the size and exact location of the abscess. Kahn [4] has reported the progressive extrusion of abscesses so injected toward a well placed decompression defect in the skull.

The complication of cranial osteomyelitis is only rarely associated with mastoid disease. In the few instances which have been encountered at the University Hospital the situation was not recognized in preoperative roentgenograms. In one case, however, unequivocal signs of osteomyelitis were demonstrable, progressing beyond the margins of the operative defect following operation.

Primary tumors of this region are extremely rare. Carcinoma associated with chronic middle ear disease has been described. The roentgen signs of this lesion with extension to the mastoid are not characteristic. The degree of bone destruction may be more marked and localized than is to be expected from suppurative disease. At our hospital in recent months extensive cranial destruction in the region of the temporal bone of a young child was found at operation to represent a large lymphosarcoma. It is well to remember that Schüller-Christian's disease may produce extensive mastoid destruction in infants. In this disease multiple lesions throughout the skull and elsewhere in the skeleton may be depended on to reveal the true nature of the situation.

CONCLUSIONS

Complications of suppurative mastoiditis other than those here discussed may from time to time be encountered. One may expect with confidence to recognize such extenuating circumstances when they do occur only if routine roentgen examination is conducted with great care and precision. In this particular field of roentgen diagnosis, accurate technic and sound dispassionate judgment are of paramount importance if unusual circumstances are to be recognized and evaluated.

University Hospital.

ABSTRACT OF DISCUSSION

DR. ISIDORE FRIESNER, New York: Dr. Johnson's paper represents the present evidence of accord between the roentgenologist and the clinician as to the method of roentgenology and the value of roentgenograms in the diagnosis of disease in the temporal bone.

DR. FREDERICK M. LAW, New York: I have to speak from the standpoint of a roentgenologist. I agree with everything which has been said. I have two observations which I should like to make. Sulfanilamide is a valuable drug but a treacherous friend. When it is administered, the case must be followed by a series of x-ray films in order to obtain a knowledge of what is taking place within the mastoid process. When given early, before any involvement of the bone occurs, the prognosis is good; but if administered after beginning bone change, the symptoms are relieved, the patient feels fine, but the drug has no effect on the bone other than a delayed action of the process.

3. Fowler, E. P., Jr., and Swenson, P. C.: Petrositis: A Roentgenological and Pathological Correlation, Am. J. Roentgenol. **41**: 317-342 (March) 1939.

4. Kahn, E. A.: The Treatment of Encapsulated Brain Abscess with Visualization by Colloidal Thorium Dioxide, Univ. Hosp. Bull., Ann Arbor **4**: 17-19, 1938.

When the drug is discontinued the bone destruction proceeds, just as though no drug has been administered, and it is absolutely necessary to use follow-up films, which should be stereoscopic, as stressed by Dr. Johnson. I have had reports that operation following the administration of sulfanilamide showed complete destruction of the bony walls, whereas the x-ray examination showed cell structure present. The reason for that is, films were not made stereoscopically to obtain the third dimension, and the apparent cell structure shown on a single film is caused by a layer of complete and incomplete cells immediately under the cortex. Visualization in the third dimension would have shown that the deeper cells were destroyed. I feel that one must have absolute faith in the films in order to know the progress of the case. We know that resolution occurs in the presence of bone necrosis, but it is safer to be aware of the condition than to feel comfortable in the absence of all symptoms. The other condition I should like to speak of is petrositis. Marked involvement of the petrous bone can be shown on a roentgenogram but I should like to add a word of caution against interpretation with only a single set of films. One should be made at the beginning of mastoiditis in order to have a comparison for future trouble. The petrous bone is just as susceptible to anatomic variations as any other bone of the skull, and I have seen variations in the structure simulating petrositis with absorption of the petrous bone. Films taken for a regular sinus involvement will many times show an anatomic variation which must be considered in analyzing the appearance in the presence of positive symptoms.

VULVAR FUSION

ITS UROGYNECOLOGIC INTEREST

MEREDITH F. CAMPBELL, M.D.
Professor of Urology, New York University College of Medicine
NEW YORK

Fused vulva (synechia vulvae) designates the condition characterized by an embryonal midline sealing together of the labia minora; usually a minute unfused area is left well forward, and through this orifice the child urinates. The foregoing represents the incomplete variety of fusion which in statistical studies occurs in approximately a third of the cases; in complete fusion the vulvar union is total. Although I could find nothing in American medical literature of the past twenty-five years appertaining to this subject, surely this does not represent the true incidence of the condition. Yet the appearance of the anomaly is so striking that its correct recognition could scarcely fail to provoke at least a few case reports. Curiously, in none of the nine cases of this condition which I have seen during recent years was the anomaly recognized until some time after birth. All the cases that I have seen were thought by their original observers to be instances of hermaphroditism or pseudohermaphroditism. All the patients except one (8 years) were less than 2 years old; the youngest was 4 months.

ETIOLOGY

This condition may be either congenital or acquired. In the acquired type, it has been thought by some that intra-uterine inflammation causes a sealing together of the labia minora or of the vaginal orifice. Other hypotheses include post partum vaginal inflammation; the sealing together results from cohesion of the inflamed tissues.[1] The explanation which seems most rational is that of an embryologic midline fusion of the labioscrotal folds on each side similar to that which the two scrotal folds undergo in the male, but the fusion usually lacks the density of scrotal fusion. This scrotal union occurs between the third and fourth months of fetal life. Although I have not found this theory recorded in the literature of the subject, I question that it is original with me.

Acquired vulvar fusion is said to follow local inflammation consequent to acute infectious diseases such as cholera, smallpox, diphtheria, scarlet fever, pneumonia, typhoid and typhus.[2] Yet I can find no description of an authentic case of this variety. In view of this, one may consider the condition predominantly a congenital anomaly.

REPORT OF CASE

The following case history of the first and oldest child in this series suggests the usual clinical problems these patients present. Diagnostic error and therapeutic delay may entail both preventable suffering of the child and much needless anxiety of the parents.

T. S., a girl aged 8 years, was admitted to the Children's Medical Division of Bellevue Hospital July 21, 1930, because of recurrent attacks of "pyelitis" for the past nine months. With these attacks there had been low grade fever and backache. Examination of the voided urine specimens repeatedly showed many pus cells, and on this observation the diagnosis of pyelitis rested. Labial examination on admission to the hospital (an attempt to obtain a catheterized urine specimen had been made) revealed an unusual labial formation. A gynecologic consultation was requested and the examination was made by an excellent gynecologist who noted that the abdomen was normal. The vagina, labia minora and majora, clitoris and a supposed urethral opening were present. The vaginal introitus was completely occluded by thick fibrous tissue. Rectal examination did not disclose the presence of any uterine body or adnexa; the patient was partially resistant to examination. A diagnosis was made of congenital malformation of the generative tract with absence of vagina, uterus and adnexa. It was suggested that the mother be advised of the condition and that the patient return for reexamination at about the age of puberty.

One week later the child was referred to the department of urology for cystoscopic observation, but this was not accomplished because of my inability to locate the external urethral meatus through the minute opening in the fused labia minora. Three days later, with a finger in the rectum as a guide, a probe was introduced 2 inches upward into the cervical area. The appearance of the fused labia will be described later. I noted at the time that the vagina and uterus were present and that it seemed that the vaginal canal would be exposed by incisional separation of the "perineal" mucosa in the midline. The following day (August 8) the patient was seen by an eminent gynecologist, who noted the opinion that the patient probably had a congenital anomaly, perhaps the absence of generative organs, and that as she defecated and urinated normally there was no indication for operative intervention until the age of puberty. The latter note dismissed the child from gynecologic consideration for one year. One month after the note was made an excretory urographic series (with neo-iopax) disclosed a morphologically normal urinary tract.

One year later (Sept. 15, 1931) the child was returned to me, at which time I took it on myself to correct the anomaly. The fusion of the labia minora was gently broken down without discomfort, revealing a normal hymen, vagina and urethra. Vaginal endoscopy disclosed a normal appearing cervix. Petrolatum dressing and special cleanliness were employed for one week. In June 1933 the urine was normal, including bacteriologic culture. There were no complaints. At the age of 16 years (1937) the child still had no complaints and was developing normally in every respect.

PATHOLOGIC AND CLINICAL CONSIDERATIONS

The appearance of the fused labia minora is striking and is likely to be extremely confusing to one who never before has seen it. The interlabial (majora)

From the Department of Urology, New York University College of Medicine.

1. Vakar, N. A.: Vulvar Adhesions in Young Children, Pediatriya **14**: 477, 1930. Scontrino, A.: Congenital Adhesions of Labia Minora, Clin. Ostet. **30**: 645 (Sept.) 1928. Ochsenius.[2]

2. Ochsenius, K.: Interlabial Occlusion of Vulva in Children and Its Treatment, Deutsche med. Wchnschr. **53**: 838 (May 13) 1927.

vulvar region presents a smooth, regular, reddish or bluish red mucosal surface extending well forward anteriorly; the clitoris is likely to be completely covered over by the midline fusion. In short, with the labia majora separated the entire area appears to be all perineum up to the subpubic level (fig. 1). In the subclitoric region, and as commonly observed in the incomplete variety of vulvar fusion, there is a small orifice through which urine is passed (fig. 2). This orifice is likely to be reddened, and the adjacent tissues may show urinous irritation. When the midline of fusion is thin it appears slightly bluish, but when the union is fairly strong there is but slight tissue differentiation.

Not having seen a case of complete fusion of this variety, I cannot describe it from observation but must rely on descriptions in the literature. These indicate that the labia minora are totally fused, there being no orifice through which the child can void. It is obvious that under these conditions the expulsion of urine can take place only through a congenital vaginorectal fistula or a urethrovaginorectal fistula. In other words, complete vulvar fusion in the absence of an adequate urinary exit means an unviable fetus or child.

Clinically the vulvar fusion is of particular interest to urologists and gynecologists, since first inspection usually prompts the diagnosis of hermaphroditism or pseudohermaphroditism. Yet the more important consideration is the interference with urinary outflow and faulty urinary drainage caused by the fusion. Local irritation or pyuria usually directs attention to the anomaly. Each of these symptoms is the result of mucosal irritation and exudative inflammation consequent to the retention of urine in the vagina behind the fused vulva—a condition analogous to preputial stenosis, in which the retained decomposing urine produces local penile irritation with the appearance of pus in the voided specimen. I have no record of advanced pathologic change in the upper urinary tract due to obstruction consequent to labial fusion; Rochet and Ambre [3] reported pronounced urinary disorder due to fusion of the labia minora in two elderly women. Yet there is no reason why pronounced urinary disturbances should not occur in children with marked labial fusion. As a corollary, the anomaly would doubtless be more often disclosed if close examination of the genitalia were made in all females with disturbances of vesical function.

Fig. 1.—Characteristic appearance of fused labia minora. The minute dimple into the introitus is the exit of the urine and menstrual flow. Note that the clitoris also is completely covered by the midline fusion.

Fig. 2.—Probe in the orifice of case shown in figure 1.

Fig. 3.—Appearance following midline division of the fused labia minora. The probe shown in figure 2 was used to accomplish the separation; the clitoris above is inadequately exposed. Hymen, vagina and cervix are normal.

It is notable that the basic lesion is an occlusion by fusion rather than an atresia; the labial closure is membranous rather than simply a small orifice. Nor is the lesion associated with the hymen; the line of fusion is well exterior to the hymen structure. In all of the nine cases that I have observed the architecture of the hymen was normal, although in some cases the hymenal mucosa was redundant and produced an unusual pouting after the labia minora were divided.

I have no information regarding the morphology of the upper urinary tract in any of my cases except the first, in which it was normal. It is likely that some ureterorenal anomaly exists in the others, since postmortem studies have shown that genital malformation means anomaly of the upper urinary tract in about one in four instances. As these patients appeared for treatment, because of its simplicity I proceeded at once to correct the anomaly and unfortunately obtained urographic evidence only in the first and photographic record only in the last case. Endoscopic vaginal examination showed a normal cervix in the four cases thus investigated.

As the patient reaches puberty, the retention of menstrual flow by the minute orifice causes its collection in the vagina (hematocolpos) or retention of blood in the uterus (hematometria). None of our patients had menstruated. All had pus in the voided specimen and were referred for examination and treatment because of this as well as the striking anomalous appearance of the external genitalia—thought to be hermaphroditic.

DIAGNOSIS

The diagnosis is readily made on inspection of the previously described anomaly. If a case has once been observed, diagnostic difficulty will scarcely again be encountered.

PROGNOSIS

The prognosis is uniformly good if the anomaly is corrected. The fused vulva prevents intercourse until the union is divided. Treatment should be instituted as soon as the diagnosis is made, chiefly to permit free

3. Rochet, Phillipe, and Ambre, R.: Urinary Disorders Due to Synechia of the Labia Minora in Old Women: Two Cases, Lyon méd. **160:** 519-521 (Nov. 14) 1937.

urinary drainage and thus avoid local genital irritation consequent to urinary retention and decomposition. With the establishment of a normal, wide open, freely draining introitus, the irritation disappears and the "pyelitis" (pyuria) will usually spontaneously disappear. Yet the child should not be discharged cured of urinary infection until at least two negative cultures of catheterized urine specimens have been obtained. In short, oral chemotherapy may be required.

TREATMENT

Treatment is simple and consists in the separation of the vulva by a midline cleavage of the line of fusion (fig. 3). I have encountered no case in which an anesthetic was required nor have I found such a case recorded. Yet it is possible that an unusually firm midline fusion might require general anesthesia with partial incision with knife or scissors. Usually the membrane is readily divided and no scar results. This is easily accomplished by inserting a hemostat in the small orifice below the clitoris; as the forceps are now opened widely, the line of fusion will separate forward to the clitoris and posteriorly to the body of the perineum (posterior fourchette). It is equally simple, once the orifice has been slightly enlarged, to stretch and divide the membrane with a finger or to cut the remaining fusion with a semisharp instrument or with a small bistoury. Twice I have used a grooved director and three times a round pointed probe as a rigid instrument to accomplish the labial division. The procedure should be performed from above downward and requires but a few seconds. As the labia are separated, the normal pouting hymen and the urethral orifice appear; in two instances the urethral meatus also was small and required dilation with sounds. It is essential that all preputial adhesions be broken down and the clitoris fully exposed to prevent subsequent irritation by retained smegmatic débris. The last often induces masturbation. Following the operation the application of a soothing ointment such as boric acid ointment or petrolatum is advocated. I have made it a practice to leave a small pledget of cotton between the labia to keep them separated for a short time. The whole procedure is readily carried out in the office.

SUMMARY

In the clinical aspects of fusion of the labia minora the chief considerations are (1) the recognition of the anomaly in order to differentiate it from hermaphroditism and other unusual genital maldevelopments and (2) the establishment of free urinary drainage to prevent genital inflammation by the irritating action of retained decomposing urine. The removal of this irritation may be expected to prevent masturbation in most instances. Unless the labial fusion is eradicated in early childhood, it is likely not only to cause retention of menstrual flow, with its attendant pathologic alterations and dangers, but to become more dense in later years and subsequently prevent intercourse. The condition is another of the myriad of unusual causes of pus in the voided specimen, too often diagnosed as pyelitis.

Only a catheterized specimen is worth examining when urinary infection in the female is under investigation, and the attempt to perform catheterization will readily disclose the anomaly. Nor will catheterization be satisfactorily accomplished until the labial fusion has been eradicated.

140 East Fifty-Fourth Street.

LYMPHOGRANULOMA VENEREUM IN RELATION TO CHRONIC ULCERATIVE COLITIS

ENID C. RODANICHE, PH.D.
JOSEPH B. KIRSNER, M.D.
AND
WALTER LINCOLN PALMER, PH.D., M.D.
CHICAGO

In 1928 Frei and Koppel [1] first suggested, on the basis of clinical evidence, that esthiomene and inflammatory rectal stricture might result from lymphogranuloma venereum. Frei attributed the lesions to lymph stasis with possible banal secondary influences. Experimental evidence rapidly accumulated, however, to indicate that the genito-anorectal syndrome was a manifestation of the presence of the virus of lymphogranuloma venereum itself. This evidence has taken three main forms: (1) microscopic studies, (2) preparation of skin test antigens from the exudates of the affected tissues (Nicolau and Banciu,[2] Nicolas and his co-workers,[3] Wien and Perlstein [4]), and (3) direct isolation of the virus from the tissues in susceptible experimental animals, usually the guinea pig and monkey (Levaditi and his co-workers,[5] Travassos,[6] Caminopetros [7]). In addition to the experimental evidence, so large a mass of clinical evidence has accumulated in recent years that rectal stricture with or without accompanying genital lesions in patients with positive Frei tests is generally accepted as being due to the virus of lymphogranuloma venereum.

Recently reports have appeared suggesting that certain cases of proctitis and ulcerative colitis also may be due to lymphogranuloma venereum. This conception has been given impetus by clinical reports such as the report of Dick,[8] who first described proctitis and colitis in association with rectal stricture in Frei positive patients and who found that the onset of stricture was often preceded for some time by rectal bleeding and suppuration. Goodman [9] performed Frei tests in twenty cases of proctitis and colitis without rectal stricture, obtaining positive results in seven. Stafford [10] described

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2. Nicolau, S., and Banciu, A.: Contribution à l'étude de la lymphogranulomatose inguinale (maladie de Nicolas-Favre), Ann. de dermat. et syph. **3:** 332-344 (April) 1932.

3. Nicolas, J.; Favre, M.; Lebeuf, F., and Charpy, J.: Intradermoréactions positives dans la maladie de Nicolas-Favre (trois cas avec un antigène tiré d'une forme anorectale éléphantiasique de la maladie, Bull. Soc. franç. de dermat. et syph. **39:** 24-25 (Jan.) 1932.

4. Wien, Max S., and Perlstein, Minnie O.: Lymphogranulomatosis Inguinale, Arch. Dermat. & Syph. **27:** 854-855 (May) 1933.

5. Revaut, P.; Levaditi, Constantin; Lambling, A., and Cachera, René: La présence du virus de la maladie de Nicolas-Favre dans les lésions d'un malade atteint d'ano-rectite ulcéro-végétante, Bull. Acad. de méd., Paris **107:** 98-103 (Jan. 19) 1932. Laederich, L.; Levaditi, Constantin; Mamou, H., and Beauchesne, H.: Rétrécissement inflammatoire du rectum, forme aberrante de la maladie de Nicolas-Favre: Inoculation au singe positive, Bull. et mém. Soc. med. d. hôp. de Paris **48:** 1072-1079 (July 4) 1932. Mocquot, P.; Levaditi, Constantin, and Reinié, L.: Recto-colite primitive due au virus de la maladie de Nicolas et Favre (virus lymphogranulomateux), Bull. Acad. de méd., Paris **113:** 320-325 (March 5) 1935.

6. Travassos, A.: Sur la présence du virus de la maladie de Nicolas et Favre dans la muqueuse rectale chez un malade présentant un rétrécissement du rectum, Compt. rend. Soc. de biol. **126:** 601-603 (June 29) 1937.

7. Caminopetros, M.: L'immunité et ses caractères particuliers dans la lymphogranulomatose vénérienne, Bull. Acad. de méd. Paris **120:** 114-121 (July 26) 1938.

8. Dick, Walter: Ueber entzündliche Rektumstrikturen, Beitr. z. klin. Chir. **160:** 303-336 (Sept.) 1934.

9. Goodman, Joseph: The Relationship of Colitis and Proctitis to Lymphopathia Venerea, Am. J. Syph., Gonor. & Ven. Dis. **20:** 394-407 (July) 1936.

10. Stafford, E. S.: Regional Ileitis and Ulcerative Colitis, Bull. Johns Hopkins Hosp. **62:** 399-407 (April) 1938.

ulcerative colitis in three Frei positive patients and attributed the colitis to lymphogranuloma venereum. Paulson [11] prepared antigens from the colonic exudates of patients with chronic ulcerative colitis with and without positive Frei reactions and obtained positive cutaneous tests in cases of lymphogranuloma venereum and negative tests with healthy persons or patients suffering from other conditions. Dick [8] and Goodman,[9] however, failed to obtain satisfactory Frei antigen from the pus aspirated from the perirectal abscesses in a case of inflammatory rectal stricture with a positive Frei test or from ulcerated areas of the colon at autopsy in a case of chronic ulcerative colitis with a positive Frei reaction.

Since a large number of patients with nonspecific ulcerative colitis were available, we decided to pursue the study of this question. All such patients were studied with regard to the Frei reaction and the neutralizing powers of their serums against the virus of lymphogranuloma venereum. Attempts also were made to isolate the virus from the tissues of selected cases.

FREI TESTS

In the performance of the Frei test we used a mouse brain antigen prepared according to the usual technic from a strain of the virus of lymphogranuloma venereum isolated by us from pus aspirated from the enlarged inguinal node of a patient in the third week of the infection. This strain has gone through forty-six consecutive mouse passages to date and has yielded consistently effective antigen. Control antigen was similarly prepared from normal mouse brain.

Patients received 0.1 cc. of antigen intradermally in the flexor surface of the left arm and the same quantity of the control in the right. Readings were made in two and three days. If the result was doubtful, patients were asked to make return visits for further observation. A reaction 7 mm. or more in diameter was considered positive. In the occasional patient giving a positive reaction to normal mouse brain, the test was repeated with human antigen. We preferred the mouse to the human antigen, as it was more constantly available and gave more consistent and more marked results.

Frei tests were performed on thirty-three persons with chronic ulcerative colitis with and without stricture and on one patient with proctitis. Of these, two, both having chronic ulcerative colitis without stricture, gave positive reactions, and the remaining thirty-two, including the patient with proctitis, gave negative reactions. Four patients with stenosing lesions of the large bowel with or without accompanying ulcerations were also given the Frei test and gave positive reactions. Data concerning the Frei positive group are presented in the table.

NEUTRALIZATION TESTS

The virus-neutralizing property of the serum of all the patients in this series was also studied. We are aware that the efficacy of the neutralization test in lymphogranuloma venereum is a controversial subject and have discussed this question in some detail in another paper.[12] It may be stated here, however, that we have found this test a very satisfactory diagnostic measure.

Technic.—As the source of virus, the brain of a mouse showing marked symptoms of lymphogranuloma venereum infection is removed, triturated well with salt solution and then centrifuged. The supernatant fluid is made up into serial dilutions from 1 : 10 to 1 : 10,000. To one volume of the various virus dilutions is added two volumes of inactivated serum. The mixtures are shaken, placed in the incubator at 37 C. for one hour and then left in the refrigerator at 4 C. over night, from sixteen to seventeen hours. Two weighed white mice are now inoculated intracerebrally with 0.03 cc. of each of the various mixtures. Mice are kept under observation for three weeks and weighed every two or three days.

Symptoms appeared in unprotected animals in from two to eight days, consisting of ruffling of the fur, arching of the back, tremors, ataxia, priapism, conjunctivitis, convulsions, cachexia and occasional paralysis. In protected animals symptoms failed to develop or else appeared after a prolonged incubation period.

Controls, with use of a known positive and known negative serum, were conducted with each series of test serums, and routine histologic and bacteriologic studies were made.

The serums of all six of the Frei positive patients previously mentioned showed repeated and consistent neutralizing properties against the virus of lymphogranuloma venereum. The serums of the remaining thirty-two patients, who were Frei negative, failed to show such properties.

The intradermal neutralization test in the guinea pig, as described by Wassen,[13] also was used. This method, however, was not found to give as consistent results on the whole as the intracerebral test in mice, there being considerable variation in reactivity from one guinea pig to another.

ISOLATION OF VIRUS FROM TISSUES

As the Frei and neutralization tests merely demonstrate that there is, or has been at some time in the past, a lymphogranuloma venereum infection, we sought to clarify the relation of this condition to chronic ulcerative colitis by attempting to isolate the virus from the affected tissues. Biopsy specimens from active areas of the bowel were studied for this purpose.

Owing to the lability of the virus and the small amount of material available, we found it most practicable to inoculate animals directly. The bit of tissue, usually about 5 mm. in diameter, was ground well with 1 cc. of salt solution and the resulting emulsion sucked up into a tuberculin syringe. Six white mice were then inoculated intracerebrally with 0.03 cc. of the emulsion, and one guinea pig was inoculated subcutaneously in the groin with from 0.2 to 0.3 cc. Bacterial cultures were also made to determine the kind and amount of contamination present. Mice tolerated this treatment surprisingly well. Some had acute symptoms and died in from one to three days, at which time hemolytic and occasionally nonhemolytic Bacillus coli was cultured from the brain. The majority, however, were able to overcome the initial bacterial infection and either contracted later a more slowly evolving infection with the lymphogranuloma venereum virus or survived symptom free until killed at the end of two months for further study. The guinea pigs inoculated frequently developed subcutaneous abscesses from which a variety of cocci and bacilli were cultured. Occasionally a slight sterile lymphadenitis appeared, but we were never able

11. Paulson, Moses: Intracutaneous Responses, Comparable to Positive Frei Reactions, with Colonic Exudate from Chronic Ulcerative Colitis Cases with Positive Frei Tests, Am. J. Digest. Dis. & Nutrition **3**: 667-673 (Nov.) 1936; A New Diagnostic Intradermal Reaction with Bowel Antigen, J. A. M. A. **109**: 1880-1886 (Dec. 4) 1937; The Diagnosis of Colitis Associated with Virus of Lymphogranuloma Venereum by Bowel Antigen, Am. J. Digest. Dis. & Nutrition **5**: 554-562 (Nov.) 1938; Bowel Antigen, J. A M. A. **112**: 1788-1792 (May 6) 1939.

12. Rodaniche, Enid C.: The Neutralization Test in Lymphogranuloma Venereum, J. Infect. Dis. **66**: 144-147 (March-April) 1940.

13. Wassen, Erik: Studies of Lymphogranuloma Inguinale from Etiologic and Immunologic Points of View, Acta path. et microbiol. Scandinav., 1935, supp. 23, p. 1-181.

to recover virus from such nodes by passage to mice or other guinea pigs, nor were we able to prepare a satisfactory Frei antigen from them.

We were unable to isolate the virus of lymphogranuloma venereum by the described technic from either of the two Frei positive patients with typical chronic ulcerative colitis. Patient 1 was available for only one biopsy, but from patient 2 very satisfactory biopsies were obtained on three different occasions from active ulcerated areas of the bowel, showing considerable bleeding and exudation.

Of the four Frei positive patients with stenosing lesions of the large bowel with or without accompanying ulcerations, we were able to obtain lymphogranuloma venereum virus from two. Only one biopsy specimen was obtained from patient 4. This was taken shortly after the termination of a very successful course of treatment with sulfanilamide and was negative. From patient 5 two biopsy specimens were obtained, one of which gave negative results, the other proving unsatisfactory because of the presence of a hemolytic colon bacillus which killed all but one of the mice inoculated within forty-eight hours. Of two biopsy specimens taken from patient 3, one gave negative results and the other yielded a highly virulent strain of the virus of lymphogranuloma venereum. We have maintained this strain for nine passages in mice and find that it cross immunizes with the strain previously isolated by us from a frank inguinal lymphadenitis. Frei antigen prepared with this strain gave positive Frei reactions in two known cases of lymphogranuloma venereum and negative results in three controls. A single biopsy specimen from the lower end of the stricture in case 6 yielded a strain of the virus of lymphogranuloma venereum of relatively low pathogenicity for mice. Symptoms appeared in two of six mice thirty days after injection. The strain died out after two passages but yielded satisfactory Frei antigen, as indicated by the production of positive Frei reactions in three cases of lymphogranuloma venereum and negative reactions in three controls.

Significant Data for Six Frei Positive Patients with Various Disorders of the Large Bowel

Patient	Sex	Age	Race	Clinical Diagnosis	Proctoscopic Evidence	Frei Reaction	Neutralizing Power of Serum	Virus Isolations	
								Source of Biopsy	Result
1. F. B.	♂	39	White	Chronic ulcerative colitis	Numerous superficial ulcerations, no stricture	8 mm.	Positive	Ulcerated mucosa of rectum	Negative
2. M. G.	♀	28	White	Chronic ulcerative colitis	Granular bleeding mucosa, mucopurulent exudate, no stricture	7 mm.	Strongly positive	Ulcerated rectal mucosa Same 3 mo. later Same 1 mo. later	Negative Negative Negative
3. E. S.	♀	40	White	Rectal stricture with ulceration of the neighboring mucosa	Reddened granular mucosa, stricture 4-5 cm. from anal ring	10 mm.	Strongly positive	Ulcerated mucosa below stricture Same 5 mo. later	Negative Positive
4. L. P.	♂	40	White	Rectal stricture, regional colitis, colostomy	Friable bleeding mucosa, rectal stricture	12 mm.	Positive	Lower margin of stricture	Negative
5. P. H.	♀	50	White	Inflammatory stricture of sigmoid colon, benign rectal polyps, colostomy	Bleeding mucosa greenish yellow exudate, stricture 8 cm. from anal ring	7 mm.	Positive	Inflamed mucosa below stricture Same 13 mo. later	Negative Unsatisfactory
6. E. P.	♀	38	White	Rectal stricture	Smooth stricture 6.5 cm. from anal ring, no inflammation	9 mm.	Very strongly positive	Lower margin of stricture	Positive

COMMENT

The fact that thirty-two out of thirty-four patients (94 per cent) with chronic ulcerative colitis and proctitis in this series had negative Frei tests and showed no evidence of neutralizing antibodies in their serums against the virus of lymphogranuloma venereum indicates that this virus was in no way involved in the great majority of cases. A state of anergy has been shown to exist in a small percentage of cases of proved lymphogranuloma venereum but certainly cannot explain the negative results in so large a number. It is significant that our series included persons in all stages of the disease, from the acutely ill to those in whom there was apparent quiescence. The serum of six patients with negative Frei tests was tested both during a relatively inactive phase of the condition and during a subsequent flare-up with consistently negative results. On the other hand, serum from the six patients with positive Frei tests was repeatedly positive. It seems evident, therefore, that the condition of the patient at the time of bleeding could not account for the failure to observe neutralizing antibodies in the serum.

In the two Frei positive patients with chronic ulcerative colitis the relationship of the two conditions is difficult to evaluate. Our failure to isolate virus from the bowel lesions of these two patients, while suggestive, is not conclusive, in view of the difficulty encountered by ourselves and others in obtaining this virus from typical infections with lymphogranuloma venereum. Consideration also must be given to the possibility that the virus, although not directly responsible for the bowel ulcerations, may have paved the way for other necrotizing agents to become established by producing a lymph stasis, as Frei originally suggested. In this connection it may be significant that Dack and his co-workers [14] have isolated Bacterium necrophorum from all of these patients. Attention may also be called to a certain similarity in the proctoscopic picture between some lymphogranuloma venereum infections of the large bowel and chronic ulcerative colitis, especially well illustrated in our series by case 3, which may occasionally cause confusion in the differential diagnosis.

SUMMARY

Thirty-one patients with chronic ulcerative colitis and one with proctitis gave negative Frei reactions and did not possess neutralizing antibodies against the virus of lymphogranuloma venereum in their serums. Two patients with ulcerative colitis and four with stenosing lesions of the large bowel with or without accompanying ulceration, when similarly tested, gave positive results.

The virus of lymphogranuloma venereum was isolated from two of the Frei positive patients with rectal stricture.

14. Dack, G. M.; Kirsner, J. B.; Dragstedt, L. R., and Johnson, Robert: A Study of Bacterium Necrophorum in Chronic Ulcerative Colitis and of the Effect of Sulfanilamide in Treatment, Am. J. Digest. Dis. **6**: 305-308 (July) 1939.

CONCLUSION

Lymphogranuloma venereum and nonspecific ulcerative colitis are independent diseases which, in their early stages, may resemble each other clinically and proctoscopically.

The six cases in which positive Frei tests were obtained are here summarized:

CASE 1.—F. B., a man aged 39, first seen in the gastrointestinal clinic in 1932, had had a diarrhea of six years' duration. The onset of illness had been sudden with the passage of bloody, liquid movements. Examination elsewhere disclosed no evidence of parasitic infection. Treatment had included emetine, calcium carbonate, belladonna, acetarsone, silver nitrate enemas and various forms of vaccine therapy.

Proctoscopic examination revealed an injected bowel mucosa with numerous superficial undermined ulcerations of various sizes: a picture not unlike that seen in amebic dysentery. X-ray studies demonstrated a small colon devoid of haustra, the rectum was narrowed and, on mucosal films, the mucosa of part of the transverse colon and superior descending portion was swollen.

On many examinations the blood and urine were normal. Wassermann and Kahn tests were negative. Repeated search for amebas in the stools and many stool cultures were consistently negative. Agglutination studies were also negative.

Treatment included the use of sedatives, tincture of belladonna and a bland, low residue diet. Very mild improvement followed the use of Bargen's serum. Numerous proctoscopic examinations by several observers were interpreted as showing various phases of a chronic nonspecific ulcerative colitis. When last examined, the rectal mucosa was reddened with several areas of punctate bleeding.

CASE 2.—M. G., a woman aged 28, entered the University of Chicago Clinics complaining of rectal bleeding which had lasted three years. Bowel movements were hard and there was much flatulence. Treatment by a local physician consisted of tannic acid enemas daily.

She had been treated for a Bartholin cyst infection a year and a half previously; the lymph nodes on the corresponding side were swollen and tender. One month later a recurrence of this infection again required incision and drainage.

Physical examination was essentially negative. Results of laboratory studies were normal. Agglutination tests for typhoid, paratyphoid and dysentery were negative. X-ray examination revealed a normal colon and terminal ileum. Proctoscopically the mucosa of the rectum and sigmoid was inflamed and granular and bled easily. There was a moderate mucopurulent exudate. The appearance was considered typical of chronic nonspecific ulcerative colitis.

Treatment included sulfanilamide up to 80 grains (5 Gm.) daily, cod liver oil retention enemas, azosulfamide up to 80 grains daily, nicotinic acid 80 mg. daily, sedatives and a bland diet. The patient's condition has remained essentially unchanged.

CASE 3.—E. S., a woman aged 40, was first seen in 1931 with bleeding from the rectum, which had continued for several years. She had been treated many years for arthritis involving the hands, knees and shoulders. Proctoscopic examination disclosed a reddened granular mucosa with several small superficial ulcerated areas; a fibrous band narrowed the ampulla. X-ray studies revealed a narrowed rectal ampulla, with absence of haustra in the descending colon. There was moderate secondary anemia.

Cultures and examinations of the stools for parasites were negative. Agglutination tests for typhoid, paratyphoid and dysentery were negative. The patient's course during the next nine years was variable. In 1933 a definite anal stricture at a level of 4 or 5 cm. was noted; the mucosa was granular and friable. Treatment included a series of injections with Bargen's serum, sulfanilamide and azosulfamide. Hospitalization was required for the treatment of perianal and ischiorectal abscesses and excision of a fistula in ano. The patient has continued on a program including a nonlaxative, low residue diet with sedatives, tincture of belladonna and thiamine hydrochloride. Recently there has been a decrease in the number of stools and the patient has improved subjectively.

CASE 4.—L. P., a man aged 40, was first seen in the University of Chicago Clinics in November 1933 with bloody diarrhea and rectal tenderness. In 1926 he had a penile sore treated with intramuscular injections. In 1928 another penile sore, associated with a sore throat and joint pains, was treated with intravenous and intramuscular injections. A positive serologic reaction was reported at this time. In February 1933 a draining rectal fistula was surgically treated elsewhere. Two Wassermann and Kahn tests as well as a spinal fluid examination were negative. No parasites were found in the stools, and repeated cultures were negative. Rectal examination disclosed the scars of healed fistulas; a marked stricture was palpable, and on proctoscopic examination the rectal mucosa was friable and granular.

Between April 3 and Oct. 13, 1934, the patient was treated with antimony and potassium tartrate, receiving from 3 to 10 cc. of a 1 per cent solution intravenously in three courses of ten injections each. Frequent dilations of the rectal stricture were necessary. In October the inguinal nodes on the left side were swollen and tender.

In June 1936, 8 inches of transverse colon was resected at the Mayo Clinic because of a regional colitis. In December 1937 a colostomy was performed because of obstruction. At this time an inflammatory mass was felt in the rectum and a similar mass involved the left portion of the transverse colon. He was subsequently treated with sulfanilamide, 60 grains (4 Gm.) daily. The purulent discharge from the colostomy stopped and the patient gained 50 pounds (23 Kg.). When last seen, he was in good general health. On proctoscopic examination the rectal mucosa was still definitely inflamed; the stricture was unchanged.

CASE 5.—P. H., a woman aged 50, entered the University of Chicago Clinics with lower abdominal pain, malaise and diarrhea and "discharge of pus from the rectum," which had been present four or five weeks. The onset of illness had been sudden, with chills and a fever rising to 103 F. There had been a loss of 22 pounds (10 Kg.) during this time. Inquiry revealed probable gonorrheal infection two years previously, treated by injections and vaginal douches.

Physical examination was negative except for the presence of a second degree cystocele, a lacerated cervix and apparent fixation of the pelvic structures. Rectal examination revealed an obstruction at a level of 8 cm. from the anal ring and a large indurated mass on the anterior wall of the rectum. On proctoscopic examination the rectal mucosa bled easily, a thick, greenish yellow exudate was noted, and several small polypoid areas were found. Roentgenograms revealed a lesion constricting the upper portion of the rectum, probably neoplastic.

Laboratory studies revealed a moderate secondary anemia; Wassermann and Kahn tests were negative. Agglutination tests for typhoid, paratyphoid, and Sonne and Flexner dysentery were negative.

Three biopsies of the polypoid area disclosed no evidence of neoplasm. A Frei test performed in 1938 with a commercial antigen was negative. A colostomy was performed because of the obstruction. It was noted that there was a large inflammatory mass in the pelvis fixing the sigmoid colon, uterus and tubes in one mass. The sigmoid for a distance of 6 inches proximal to the mass was thickened, its wall edematous and covered with a filmy exudate. There were no enlarged lymph nodes. The patient made an uneventful recovery and subsequently was treated with sulfanilamide given orally and in retention enemas. Her course has been quite satisfactory. The rectal discharge has diminished markedly and the mucosal inflammation has disappeared.

CASE 6.—E. P., a woman aged 38, was referred to the gastrointestinal clinic for proctoscopic examination. She stated that thirteen years previously a rectal stricture had been dilated at another hospital in the city and that subsequently frequent such dilations were necessary. Two years previously treatment was required for a Bartholin's abscess on the right side. She stated that she had no venereal infection, and several serologic studies were reported negative. Several months ago she began to complain of transient sharp burning pains in the lower midabdominal region accompanied by a sense of pressure in the rectum. Pelvic examination revealed an elongated tender mass on the left side with evidence of induration in the right tubo-

ovarian region. Proctoscopic examination disclosed a smooth stricture 6.5 cm. from the anal ring, the lumen wide enough to admit a finger tip.

X-ray studies were interpreted as demonstrating an unusual narrowing of the rectal ampulla and sigmoid.

Laboratory studies were negative. The patient at the present time is being treated in the gynecology clinic for the pelvic infection.

VITAMIN P IN VASCULAR PURPURA

I. NEWTON KUGELMASS, M.D.

NEW YORK

CHEMISTRY OF VITAMIN P

Vitamin P was postulated by Szent-Györgyi [1] as a regulator of vascular permeability, isolated in crystalline form as a flavone glucoside from lemon juice and named citrin to indicate its chemistry. It was found to consist of mixed crystals of two related flavone dyes, the glucoside hesperidin $C_{50}H_{60}O_{27}$ and the glucoside of eriodictyol; the former constitutes the major part of citrin but the latter is responsible for the chemical reactivity and color production. The glucosides of citrin are but two forms of the same flavonone glucoside, the eriodictyol glucoside being formed from hesperidin by demethylation during ripening of citrus fruits, particularly lemon, orange and grapefruit.

Citrin forms light yellow crystals sparingly soluble in water but very soluble in alkali, giving intense yellow solutions. The relative composition of the solid and liquid phases, respectively, is determined by the solubility of its two components; the crystals consist mostly of insoluble hesperidin and small amounts of soluble eriodictyol, while the solutions consist mostly of eriodictyol glucoside and traces of hesperidin. These glucosides are well tolerated in doses of several hundred milligrams, retained in variable amounts by the body and readily recovered in the urine.

The flavones are a class of naturally occurring yellow plant pigment, phenyl derivatives of the 1,4-pyrone or γ-pyrone nucleus. The intensity of the color depends greatly on the position of the hydroxyl groups and is most pronounced if two are ortho in position to each other. The pigments occur in plants as glycosides, one or more hydroxyl groups being combined with a sugar molecule. The formula may be expressed by sugar-O-R, where R represents the flavone group attached to carbon —1 of the sugar, usually dextrose. This renders the auxochrome group inactive so that in the plant the flavone glycosides are practically colorless until they are hydrolyzed and the characteristic yellow develops.

The role of glycosides in plants has been interpreted as a mechanism whereby the substances which have great physical activity are held inert until they are needed in the metabolism of the plant or in detoxifying poisonous substances so that they will not injure plant cells. It is possible that the latter mechanism maintains these substances for protecting the functional integrity of the vascular endothelial system in man,[2] demonstrated in vascular purpura. These glycosides are usually levorotatory, crystalline, colorless, bitter and soluble in water.

CAPILLARY RESISTANCE OF CHILDHOOD

Capillary resistance varies with age and nutritional status. During the first few weeks of life an infant shows the highest level of capillary resistance, manifested uniformly throughout the body to the extent of about 500 mm. of mercury. This gradually diminishes during infancy until the adult level is attained, approximating about 150 mm. of mercury. There are marked fluctuations, however, not only in the level of capillary resistance but also in various sites of the body, the values increasing from a minimum at the head to a maximum at the extremities in the same child. The variations in capillary resistance with age and site reveal the remarkable adaptation of the body to environmental offense.

Capillary resistance may be measured by tourniquet, intradermal venule, graded suction or positive pressure tests; the first is a simple qualitative index of vascular status, the second a pseudoquantitative unpractical measure and the third and fourth fairly accurate measures used in this study. When cutaneous purpuric spots do not occur spontaneously they may be induced in susceptible children by any of these methods. The negative pressure method is most accurate but was not particularly adapted for clinical routine with children. The positive pressure method determines fragility in terms of the number of ruptured capillaries developing under standard conditions in response to increased intracapillary pressure maintained for five minutes.

Capillary tonus decreases in vascular hemorrhagic diseases [3] with escape of normal blood from a weakened capillary bed or vascular endothelium as a result of trauma, pressure, avitaminosis, bacterial invasion, chemical injury or lymphatic infiltration. The vast surface of the minute capillaries thus becomes weakened by mechanical injury exceeding the normal tension at that site by nutrient deficiency leading to inadequate endothelial repair, by sensitization to substances allergenic to susceptible children, by interaction of bacterial toxins with vascular structures, by precipitation of bacterial emboli and by actual chemical destruction of capillary cells.

The value of yellow benzopyrane dyes or group of flavones in restoring resistance to damaged capillaries has been determined in cases of vascular hemorrhagic diseases showing normal levels of blood-clotting constituents. Preliminary tests indicated that citrin does not alter the concentration of any of the blood components involving clotting—fibrinogen, prothrombin or platelets—in normal children or in those affected with hemorrhagic disease. With the alleged therapeutic specificity of the flavones it became a relatively simple procedure to determine their value in nutritional, allergic, infectious and toxic diseases characterized by vascular bleeding. The vitamin material was prepared commercially from orange peel according to the method of Szent-Györgyi.[4] The solution of 50 mg. per cubic centimeter of flavonones consisting of eriodictyol glucoside and hesperidin was given in doses of 150 mg. orally. Although the number of cases reported is very limited they were clearcut, permitting the first approximation of the merits of vitamin P in vascular bleeding.

REPORT OF CASES

Nutritional Purpura.—J. T., a dystrophic dehydrated white boy of 5 months weighing 6½ pounds (2,948 Gm.), suddenly developed small discrete purpuric spots over the abdomen and

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Read before the Brooklyn Medical Society and the New Jersey Medical Society.

1. Armentano, L.; Benthsáth, A.; Béres, T.; Rusznyák, Istvan, and Szent-Györgyi, Albert: Deutsche med. Wchnschr. **62**: 1325 (Aug. 14) 1936.

2. Scarborough, Harold: Biochem. J. **33**: 1400 (Sept.) 1939.

3. Kugelmass, I. N.: Clinical Control of Chronic Hemorrhagic States in Childhood, J. A. M. A. **102**: 204 (Jan. 20); 287 (Jan. 27) 1934.

4. Szent-Györgyi, Albert: Ztschr. f. physiol. Chem. **255**: 126, 1938.

lower extremities. The infant was premature, weighed 4 pounds (1,814 Gm.) at birth and failed to thrive on breast feeding, proprietary mixtures and cow's milk modifications. The infant responded to parenteral fluids, blood transfusion and gradually increasing amounts of lactic acid milk with 10 per cent added carbohydrate. The purpura diminished with clearance of the diarrhea but cleared more rapidly when the vitamin P mixture was given. The number of punctate hemorrhages induced by the positive pressure test for capillary resistance during the course of treatment indicates the effectiveness of the vascular vitamin:

Day	5	10	15	20	25	30
Petechiae	51	45	35	30	8	5
Treatment	Transfusion		Vitamin C		Vitamin P	

Allergic Purpura.—C. H., a 10 year girl of allergic constitution, had high fever, recurrent chills, abdominal pain and bloody stools. The child appeared septic, with no other abnormalities, and was considered suffering from the current intestinal infection. The blood showed 72 per cent hemoglobin, 4,100,000 red cells and 10,500 white cells, with 42 per cent polymorphonuclears, 50 per cent lymphocytes, 7 per cent eosinophils and 1 per cent basophils. On the following day the right ankle swelled, purpuric spots developed over the extremities, and the right knee and left ankle also became affected. The symptoms cleared spontaneously within a week, but the purpura persisted. Positive pressure tests of capillary resistance to determine the relative merits of 10 per cent calcium gluconate and vitamin P mixture indicated the superiority of the latter in improving vascular function:

Day	5	10	15	20	25	30
Petechiae	115	90	48	30	45	22
Treatment	Calcium		Vitamin P		0	Vitamin P

M. C., a 15 year old allergic girl, had recurrent cutaneous hemorrhages associated with nosebleeds, high fever, occasional chills, abdominal pain and persistent diarrhea with mucus and blood. The intestinal spasm was aggravated by ingestion of egg white, wheat, alcohol, cinchophen and phenobarbital, as corroborated by positive cutaneous tests. The blood picture varied in leukocytic response with a tendency to lymphocytosis. The clotting components were normal in concentration, the clotting time was normal, bleeding time normal and tourniquet test positive. The condition abated with elimination of offending allergens, but purpuric manifestations continued. Sulfanilamide therapy cleared most of the symptoms except the purpura. Vitamin P mixture given thereafter resulted in arrest of cutaneous hemorrhage and decrease in the number of petechiae following positive pressure determinations:

Day	5	10	15	20	25
Petechiae	120	80	95	20	15
Treatment	Allergen elimination	Sulfanilamide		Vitamin P	

Infectious Purpura.—K. B., a 9 year old girl, had abdominal pain, high fever and purpura over the lower extremities within a week of recovery from scarlet fever. A fresh crop of purpura appeared daily for a week, extending upward to the trunk, arms, palate and conjunctivas. There was no hematuria or other evidence of nephritis despite the destructive effect of scarlet fever toxin on the glomerular endothelium. Positive pressure tests of capillary resistance showed favorable effects from daily administration of vitamin P solution:

Day	5	10	15	20	25	30
Petechiae	96	50	92	41	85	30
Treatment	Vitamin P	0	Vitamin P	0	Vitamin P	

Mechanical Purpura.—P. A., a 9 year old boy, had petechiae in the conjunctivas and eyelids during whooping cough. G. A., a 16 year old mentally retarded boy with epilepsy, occasionally showed purpuric extravasations following severe seizures resulting from water-guzzling bouts during a ketogenic regimen. H. B., a 10 year old girl with Perthe's disease, showed orthostatic purpura when plaster of paris casts were removed and the child was allowed freedom of activity. In each of these cases the daily administration of vitamin P solution failed to show any change in the number of petechiae demonstrated by positive pressure test.

SUMMARY

A solution of eriodictyol glucoside and hesperidin, vitamin P concentrate, administered orally was effective in treatment of two children with allergic purpura, a child with infectious purpura and an infant with nutritional purpura, and ineffective in three cases of mechanical purpura. Vitamin P constitutes another valuable adjuvant in the management of vascular purpura, provided the underlying cause is cleared.

1060 Park Avenue.

Clinical Notes, Suggestions and New Instruments

ENDOMETRIOSIS OF THE ILEUM WITH CHRONIC PARTIAL INTESTINAL OBSTRUCTION

PAUL M. GLENN, M.D., AND JOHN J. THORNTON, M.D.
CLEVELAND

Endometriosis is not an uncommon condition. Sampson is quoted as seeing it 101 times in 474 gynecologic operations and Green-Armytage in 8.9 per cent of 1,000 surgical cases.[1] In this hospital endometrial implants are found in about 10 per cent of pelvic operations.[2] Regarding the organs involved, figures from the Mayo Clinic[3] state that 689 organs of 576 patients were involved with this diagnosis. These were mostly pelvic genital organs, and the intestine was involved in only seventeen instances. In these instances the sigmoid flexure of the colon was the site of endometrial implants in fourteen cases, the appendix in one and the ileum in two cases. Keene and Kimbrough[4] did not find the small intestine involved in any of 118 proved cases, nor did Cullen[5] in reporting personal observations over a twenty-five year period.

Endometrial implants in the ileum, therefore, appear to be an unusual occurrence. Such a lesion producing small intestinal obstruction is a rarity, although obstruction of the lower portion of the bowel by growth of endometrium in the rectovaginal septum is well known. Review of the English literature for the past twenty years reveals only four cases[6] of endometrial implants in the small intestine with some degree of obstruction present.

The true incidence of endometrial implants in the small intestine, however, is unknown. They are not looked for in a routine way on that organ in gynecologic operations. In rare instances an implant in the small intestine is an incidental finding at operation, or it may be the causative lesion producing intestinal symptoms which is discovered at operation.

Because of the apparent rarity of this condition, the following cases seem worthy of being reported.

From the Departments of Medicine and Surgery, Lakeside Hospital and Western Reserve University School of Medicine.

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2. Faulkner, R. L.: Personal communication to the authors.
3. Masson, J. C.: Surgical Significance of Endometriosis, Ann. Surg. **102:** 819 (Nov.) 1935.
4. Keene, F. E., and Kimbrough, R. A., Jr.: Endometriosis: A Review Based on the Study of 118 Cases, J. A. M. A. **95:** 1164 (Oct. 18) 1935.
5. Cullen, T. S.: The Distribution of Adenomyomas Containing Uterine Mucosa, Arch. Surg. **1:** 215 (Sept.) 1920.
6. Gale, Charles: "Endometriomatous" Bowel Stricture, with an Unusual Complication, Australian & New Zealand J. Surg. **1:** 323 (Dec.) 1931. Goodwin, W. H.: Endometriosis with Reference to Intestinal Implantation, Virginia M. Monthly **61:** 257 (Aug.) 1934. Mouat, T. B.: Two Cases of Stricture of the Bowel by Misplaced Endometrial Tissue, Brit. J. Surg. **14:** 76 (July) 1926. Starr, F. N. G.: Endometrioma of the Terminal Ileum, Appendix and Cecum, Arch. Surg. **19:** 152 (July) 1929.

REPORT OF CASES

CASE 1.—A white woman aged 31 entered the hospital complaining of "stomach trouble." The past history revealed that she had generally enjoyed good health. After the menarche at the age of 12 she had cramps in the lower portion of the abdomen during the menses for a few years. Five years before admission she had an (induced?) abortion, followed by profuse leukorrhea and frequent attacks of pain in the lower abdomen for about eight months. She had no other pregnancies.

The present illness began about one year before admission with an occasional feeling of fulness and vague abdominal distress after meals. This was attributed to various foods, which were eliminated from her diet without relief. The attacks increased in severity and duration. They were then characterized by cramplike pain starting in the midportion of the abdomen on the right and radiating to the left side, occasional nausea and vomiting, constipation and some abdominal distention. Between attacks she found it necessary to use laxatives frequently because of increasing constipation. About eight months before admission she first noted that the attacks were usually associated with her menstrual periods. By limiting her diet to liquid and soft foods during her menses the severity of attacks was ameliorated, but gradually this curtailment became less

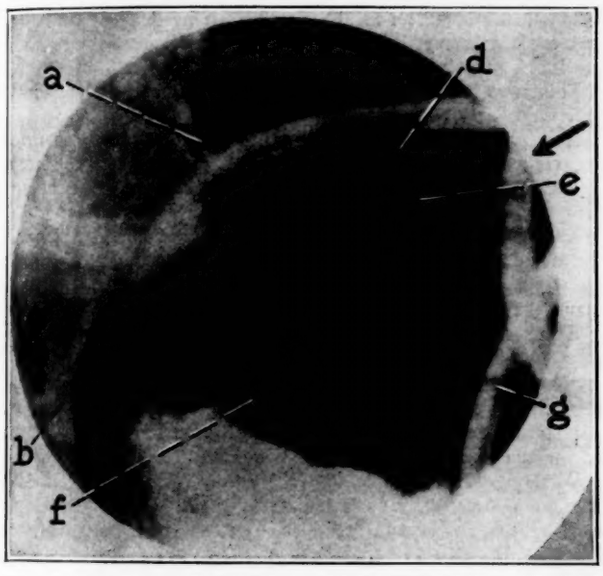

Fig. 1.—Appearance of lesion: *a*, sacro-iliac joint; *b*, ilium bone; *d*, terminal ileum; *e*, area of constriction; *f*, dilated ileum; *g*, Miller-Abbott tube.

effective. For four months the attacks had been quite severe and their duration had increased to from seven to ten days. The last attack began six weeks before admission and persisted until she entered the hospital. During this interval she was never entirely free of symptoms, though there were brief periods of relief from pain, vomiting, constipation and distention following the use of laxatives and enemas. During the year before admission she had lost more than 15 pounds (6.8 Kg.).

The patient was undernourished and chronically ill and she weighed 80½ pounds (36.5 Kg.). Positive manifestations were limited to the abdomen, which was considerably distended and tympanitic, although peristalsis was visible. Borborygmi were frequently audible and coincided with exacerbations of the abdominal pain. Vaginal examination revealed induration in both adnexal regions.

Temperature, pulse, respirations and blood pressure were normal. Laboratory data showed 9,450 white blood cells with a normal differential count, 4.52 million red blood cells, 80 per cent hemoglobin (Sahli), a negative reaction to the Kline exclusion test, blood urea nitrogen 18.5 per hundred cubic centimeters, plasma chlorides 614 mg. and carbon dioxide combining power 44.8 volumes per cent. The sedimentation rate was normal and analysis of the urine negative.

Roentgenograms of the abdomen showed numerous distended intestinal loops with a "ladder" pattern. An enema of barium sulfate did not reveal a colonic lesion.

It was believed that the patient suffered from chronic partial intestinal obstruction as a result of adhesions from an old pelvic inflammatory disease. Because of the long history, the marked distention and the poor general condition of the patient it was decided to use the Miller-Abbott intestinal tube [7] to decompress the intestine, improve the condition of the patient for operation

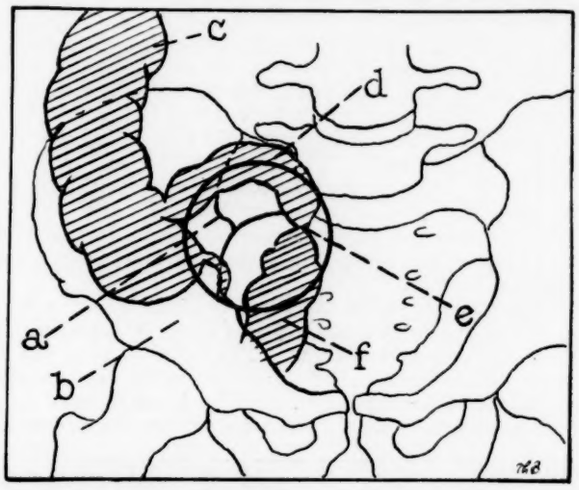

Fig. 2.—Location of lesion shown in figure 1.

and possibly aid in establishing a more accurate diagnosis. Prompt symptomatic relief and marked improvement of the distention followed the intestinal intubation. Within twenty-four hours the tube had advanced sufficiently for the patient to take adequate fluids, chloride and food [8] orally.

The advance of the tube through the lower portion of the ileum was quite slow, but the tip finally stopped in the terminal ileum. Injection of a thin suspension of barium sulfate through the tube showed a narrowed area in the terminal ileum about 12 cm. from the cecum (figs. 1 and 2), which the roentgenologist believed was due to an adhesion. Ileum proximal to the narrowed area was still somewhat dilated in spite of constant drainage of the intestine for the preceding seven days. That

Fig. 3.—Gross appearance of the constricting lesion. The arrow points to two grossly apparent dark purple nodules of endometrial tissue.

the dilated intestine was not paralyzed was evident, because kymographic records showed it to have activity of the type found just proximal to an area of obstruction.[9]

7. Abbott, W. O.: Intubation of the Human Small Intestine: XII. The Treatment of Intestinal Obstruction and a Procedure for Identifying the Lesion, Arch. Int. Med. **63**: 453 (March) 1939.

8. Noer, R. J., and Johnston, C. G.: Decompression of the Small Bowel in Intestinal Obstruction, Am. J. Digest. Dis. **6**: 46 (March) 1939.

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After twelve days with the intestinal tube in place, during which time the patient had a daily dietary intake of 2,200 calories the residue of which was drained at the point of obstruction, she was in much better condition for operation. At operation about 3 feet of the terminal ileum had a thick wall and was slightly dilated. The tip of the intestinal tube was in this segment. About 15 cm. proximal to the ileocecal valve the thickening and dilatation of the ileum ended abruptly in a moderately firm, sharply circumscribed, reddish purple area of constriction. The lesion was entirely free from all surrounding structures and the serosa was intact and glistening everywhere except at the center of the lesion, where there was a dark purple nodule measuring 2 or 3 mm. in diameter. No abnormality was noted elsewhere in the intestine. No endometrial implants were noted in the pelvis, but a detailed inspection was impossible because both tubes and ovaries showed evidence of rather extensive chronic inflammation with numerous adhesions. It was decided not to attempt any pelvic surgery because the principal lesion was in the intestine.

The constricting lesion and ileum distal to it were removed and an end to side ileocecostomy was done. The postoperative course was entirely uneventful. The intestinal tube was left in place and constant suction was maintained to keep the intestine emptied at the suture line. Oral intake was started on the second postoperative day. Intestinal drainage was discontinued

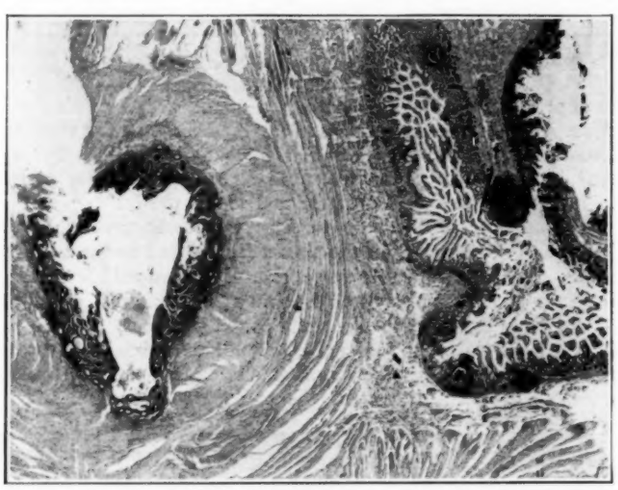

Fig. 4.—Section under high power, showing endometrial implants in muscularis of ileum.

on the fifth postoperative day without evidence of obstruction and the tube was removed on the seventh day. Convalescence continued uneventfully and follow-up observation for five months has shown no clinical or roentgenologic evidence of obstruction. She now weighs 97 pounds (44 Kg.), which is more than she has ever weighed.

CASE 2.—A white woman aged 50, a patient of Dr. A. J. Beams, made presenting complaints that were almost identical to those in case 1 except that her story was of two years' duration. Preoperative management was also similar to that in the first case but the diagnosis of endometriosis of the ileum was made preoperatively. The gross appearance of the lesion, which was in the same location as the lesion in the first case, is shown in figure 3.

Microscopic examination of both of the lesions (fig. 4) showed intact intestinal mucosa. There were numerous islands of endometrial tissue throughout the muscularis, and fibrosis and focal lymphocytic infiltration of the muscularis and serosa. It is very probable that the inflammatory reaction which usually accompanies endometrial implants resulted in fibrosis, with progressive constriction of the lumen of the ileum.

The periodicity of the symptoms of intestinal obstruction in association with the menses was probably due to the hyperplastic reaction of the endometrial tissue at such times with a greater degree of obstruction to the lumen of the ileum than between the menses when the endometrial tissue was in the resting stage. The reaction was progressive until the lumen of the ileum was constricted sufficiently to produce continuous symptoms.

CONCLUSIONS

1. In the cases here presented endometrial implants in the terminal ileum produced chronic partial intestinal obstruction.

2. The preoperative use of the Miller-Abbott intestinal tube was valuable (*a*) in controlling the symptoms of intestinal obstruction while the patient's condition was being improved for operation, (*b*) in accurately localizing the point of obstruction and (*c*) in simplifying the technical aspects of the operative procedure.

PULMONARY COMPLICATIONS DURING PREGNANCY

MILTON G. POTTER, M.D., BUFFALO

When considering diseases of the lungs during pregnancy, one must remember that there are certain normal physical changes and signs in the chest due to pregnancy.

As the growth of the uterus continues there is slight congestion of the lungs with an increased lateral expansion, the excursion of the diaphragm is decreased and the breathing becomes more costal. These changes are, as a rule, more pronounced in the primipara than in the multipara, because there is less relaxation of the abdominal muscles in the former.

It becomes immediately apparent, therefore, that such conditions bring about an ideal nidus for the harboring of infection and explains somewhat the reason why quiescent infections in the lungs may be activated.

This is particularly true of women with arrested pulmonary tuberculosis who become pregnant.

It is an astounding fact that approximately 50,000 women in the child-bearing period die each year from tuberculosis and that a total of 32,000 tuberculous women become pregnant each year in the United States.

This condition places a terrific burden of responsibility on the medical profession, for while there are certain generalities on which there is universal agreement, the question of treatment, unfortunately, is highly individualized.

Every one is pretty well agreed that matrimony in the presence of active pulmonary tuberculosis should be forbidden, for it aggravates the disease, may infect the husband and propagates tuberculous children.

It is also agreed that the strain of pregnancy and lactation add to the risk of reactivation of a quiescent tuberculous process.

While it is conceivable that pregnancy may be permitted for women whose tuberculosis has been in the quiescent stage for a period of two years or more, one can never tell when the latent disease may again become florid. One must remember that often no untoward effects are observed until the puerperium, at which time the disease flares up and resembles pneumonia more than tuberculosis. Pregnancy definitely aggravates the disease.

Unfortunately the obstetrician's advice concerning matrimony is seldom sought and he does not come into the picture until after the marriage.

If the patient has not conceived, contraceptive advice should be given. If the patient is pregnant and her tuberculous condition has been quiescent, it is proper for the physician to allow the pregnancy to continue. It is my belief and my practice that if the tuberculous process is reactivated before the fifth month abortion should be induced. In the late months of pregnancy, however, nonintervention should be the rule, as the risk of delivery is no greater than a therapeutic abortion.

If the pregnancy is allowed to continue, the patient should receive every dietary and hygienic attention accorded the nonpregnant person, and the cooperative help of an internist is not only desirable in the treatment of this complication but necessary.

A potential tuberculous patient should have as short a labor as possible, and intervention to shorten or obliterate the second stage of labor, under local or spinal anesthesia, is proper. Lactation should be prohibited, the baby separated from its mother and, if repeated pregnancies occur, sterilization should be recommended.

Another pulmonary complication during pregnancy is pneumonia. It may be of any of the types seen in the nonpregnant person, such as bronchial, lobar or influenzal. Regardless of

From the Obstetrical Department of the Millard Fillmore Hospital.

the type, the condition is most serious and in 50 per cent of the cases the onset is usually manifested by a feeling of malaise, stuffiness in the head, sore throat, a slight rise in temperature, with or without pain in the chest, and gastrointestinal disturbances.

Whether this group of symptoms is called grip or a common cold at the onset is immaterial. The fact remains that a pregnant woman with this syndrome should have the serious consideration of the physician in charge and treatment should be instituted immediately. It has been my observation that too often the physician considers this condition lightly and allows what might have been a mild attack to progress into one of the more serious types of pulmonary infection.

It must be remembered that we are dealing with a person whose natural resistance and phagocytosis is lowered by her pregnancy, which also has produced an increased congestion in her lungs. This combination of circumstances makes the respiratory tract a fertile field for continued growth of pathogenic organisms and, unless checked, will produce serious consequences for mother and baby.

It is my belief that in this combination of circumstances a bacteremia is more common than is generally realized and, if one is dealing with virulent organisms, the end results can be most disastrous, even though one institutes as complete therapy as possible.

Some years ago, during an epidemic of so-called influenza, I instituted the practice of taking cultures from the nose and throat of every pregnant private patient who was suffering with what was considered the grip. The following reports of cases, I think, will help to prove the point I am trying to make, namely that bacteremia is present more times than is generally realized and not infrequently dire results are noted in either mother or baby or both.

REPORT OF CASES

CASE 1.—Mrs. A. complained of sore throat, cough, general malaise and a severe backache. She expelled a mass which included the placenta with a five months fetus within the amniotic sac; this was sent to the laboratory and examined by the late Dr. Benjamin Roman, pathologist at the Buffalo General Hospital. Culture of the mother's throat revealed many influenza bacilli, and the same organisms were recovered from the fetus. The patient recovered.

CASE 2.—Mrs. B., a secundipara aged 33, had severe nausea with both pregnancies. In the fourth month of the second pregnancy she became ill with a so-called grip infection, which lasted for ten days. At the end of this time she started in labor and passed a four months fetus and a placenta. These specimens were sent to the laboratory for examination. A pure culture of pneumococci was found in the lungs and heart of the fetus and the identical organism was recovered from the patient's nose and throat. The patient recovered.

CASE 3.—Mrs. B., a primipara five months pregnant, previous to admission to the Children's Hospital had a history of grip and some vaginal flow for two weeks. On admission she had an elevated temperature, symptoms of grip, a bloody vaginal discharge, a cervix admitting two fingers and irregular labor pains. Several hours after the vagina had been packed the patient was delivered of twin boys, who lived fifteen minutes. The placenta was most friable and adherent and was finally removed manually in sections. The fetus and placenta were sent to the laboratory for culture. Streptococci were recovered and the same strain was obtained from the mother's throat. The patient recovered.

CASE 4.—Mrs. H., a secundipara aged 35, six months pregnant, contracted what was considered an ordinary head cold. Her family physician treated her for a period of one week. No abnormal chest signs were evident during the entire sickness except slightly diminished respiratory sounds. After the third day of her illness she became cyanotic and irrational and oxygen was administered continuously. The heart action, for the most part, continued to be slow, regular and of good volume. On the sixth day of her illness she went into labor (lasting two hours) and expelled a six months living fetus. After delivery of the placenta she went into shock, the pulse became very faint and rapid and cyanosis became more pronounced. Twelve hours after expulsion of the fetus the mother died and after fifteen hours the baby died. Bacterial examination revealed organisms in the mother's nose and throat identical with those in the organs of the fetus.

CASE 5.—Mrs. X, two weeks before the onset of labor, contracted a sore throat, coryza and general malaise. An almost pure culture of streptococcus was obtained from the throat. Her general condition did not improve greatly until after the delivery of her child. She gave birth to a male child who appeared normal in every respect. The delivery was not remarkable. Twenty-four hours later the baby was found dead in his crib. At autopsy the lungs were in the red stage of hepatization and the liver and spleen were soft and friable. Nothing else of note was found. Cultures from the liver and spleen yielded the same strain of streptococcus as was previously obtained from the mother's throat.

COMMENT

The cases here reported and their histories impressed me tremendously and taught me that even in the presence of adequate antepartum and medical care disastrous results may be expected when the respiratory tract of a pregnant woman is infected with virulent organisms.

PANTOTHENIC ACID IN HUMAN NUTRITION

T. D. SPIES, M.D., CINCINNATI; S. R. STANBERY, M.A., BIRMINGHAM, ALA.; R. J. WILLIAMS, PH.D., AUSTIN, TEXAS; T. H. JUKES, PH.D., AND S. H. BABCOCK, PH.D., BERKELEY, CALIF.

The syndrome resulting from a lack of pantothenic acid in the diet of the chick and the rat has been described [1] and the recent synthesis of pantothenic acid [2] has made this substance available in pure form for clinical studies. Since there was no information regarding the possible toxicity of this substance in human beings, we administered varying amounts of calcium or sodium pantothenate to fifteen people and observed that 100 mg. of either salt may be injected intravenously without causing a reaction and without significant change in blood pressure, pulse, temperature and respiration.

In making these observations we assayed the blood and urine for pantothenic acid [3] before and at intervals after injection. We found that the pantothenic acid content of the blood increases up to 50 per cent above the preinjection level and that this increase is noted within the first three hours after the injection but that in all instances the value returns to its previous level within twenty-four hours. Urine specimens showed an increased pantothenic acid concentration immediately following the injection, but this also returned to normal within twenty-four hours. The blood pantothenic acid concentration of twenty-eight patients with pellagra, beriberi and riboflavin deficiency was decreased from 23 to 50 per cent, as compared with the levels of eighteen normal persons.

Using a similar technic [4] we have assayed this same blood for riboflavin and have found that following the injection of

University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama. From the Department of Internal Medicine, University of Cincinnati, the Departments of Preventive Medicine and Chemistry, University of Texas, and the Agricultural Experiment Station, University of California. This study was aided by grants from the John and Mary R. Markle Foundation, the Research Corporation, and Anheuser-Busch, Inc.

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pantothenic acid there likewise is a rise of from 20 to 30 per cent in the riboflavin level of the blood. The administration of 20 mg. of calcium pantothenate daily, for four days, to four persons with cheilosis and typical ocular manifestations diagnostic of riboflavin deficiency caused similar temporary increases in the blood pantothenic acid and riboflavin. These values, however, returned to their previous levels when therapy was discontinued.

We have found that the injection of 200 micrograms of riboflavin per kilogram of body weight caused an increase of 80 per cent in the blood flavin concentration and of 45 per cent in the pantothenic acid level. While these values remained high for from three to four hours, they returned in each instance to the former level by the next day.

These observations indicate that pantothenic acid is essential to human nutrition and that its function is probably associated with that of riboflavin.

Special Clinical Article

THE DIAGNOSIS OF HEART FAILURE

CLINICAL LECTURE AT NEW YORK SESSION

TINSLEY R. HARRISON, M.D.

NASHVILLE, TENN.

Heart failure is of two general types, which may be conveniently designated as forward and backward failure respectively. Forward failure, which is characterized by inability, usually setting in suddenly, of the heart to supply an adequate amount of blood to the body tissues, may be subdivided into (*a*) sudden death (usually brought about by ventricular fibrillation), (*b*) cardiac syncope (which is commonly due to sudden slowing of the heart) and (*c*) cardiac collapse (which may be induced by extreme tachycardia, by acute myocardial injury or by sudden hindrance to the heart in carrying out its work). In all these conditions the chief clinical symptoms are those referable to the central nervous system and are brought on by a deficiency of the blood supply to this vital area, the severity of the symptoms depending on the degree and the rapidity of onset of the circulatory deficiency to the brain.

Backward failure of the heart, on the other hand, occurs when, because of an excessive load or advanced disease of the musculature or (more commonly) because of a combination of these two factors, the degree of ventricular dilatation becomes sufficient to impose an impediment to the emptying of the corresponding auricle. The auricular pressure is therefore raised, and this leads to a rise in pressure in the veins which drain into the affected auricle and to congestion in the vascular bed from which these veins arise. Since in most of the common types of heart disease the greater strain is on the left side of the heart, such congestion usually occurs first in the pulmonary circuit, where it produces the clinical manifestations of dyspnea, cough, rales in the lungs (when the congestion has become severe enough to cause edema of the lungs), decreased vital capacity and prolongation of the pulmonary circulation time. In most cases congestion in the systemic circuit does not occur until the increase in pulmonary pressure has become sufficiently great to induce secondary dilatation of the right ventricle with a rise in the pressure in the right auricle. When this takes place the characteristic manifestations of systemic engorgement can be noted. These include distention of the veins, enlargement of the liver, edema of the lower portion of the body and albuminuria.

Some of the important features and causes of these two general types of heart failure are summarized in table 1. The discussion to follow will, however, be concerned solely with the diagnosis of backward (congestive) failure, because this is the common type of chronic heart failure.

Before a diagnosis of congestive heart failure can justifiably be made in a given case two questions must be answered in the affirmative. These are 1. Does this patient have heart disease? 2. Is congestive heart failure the only syndrome which can account for the symptoms? Since the answers to these two questions are based on entirely different criteria, they will be considered separately.

THE DIAGNOSIS OF HEART DISEASE

Attempts to discuss in detail the evaluation of all the various manifestations of heart disease would obviously lead too far afield. For the purpose at hand it will suffice to mention briefly some phenomena which are practically diagnostic of heart disease and other manifestations which are suggestive of it. A reliable history of substernal distress appearing during muscular effort and disappearing within a few minutes after the subject has begun to rest is almost certain evidence of angina pectoris and hence of a certain type of heart disease. The presence of enlargement of the heart constitutes conclusive evidence that heart disease is present. Diastolic murmurs almost invariably mean heart disease. (It is recognized that occasionally functional diastolic murmurs occur in persons with marked hypertension or even in persons with thyrotoxicosis or severe anemia. However, such murmurs are rarely if ever seen except when the process has involved the heart, and hence one is justified in regarding a diastolic murmur as constituting almost certain evidence of heart disease.)

There are certain other phenomena which constitute suggestive evidence of heart disease. These include a history of rheumatic fever, long-standing and well marked elevation of the blood pressure, chronic auricular fibrillation, a heart rate which is below 40 persistently, and gallop rhythm with the extra sound occurring in diastole. The latter phenomenon in itself is practically diagnostic of heart disease but is listed among the suggestive signs because occasionally it may be impossible to distinguish between a normal third heart sound, an audible auricular contraction, reduplication of one of the sounds and true gallop rhythm. Another sign which usually indicates the presence of heart disease is a persistent and very loud systolic murmur. (Faint or even moderately loud systolic murmurs are often heard in the absence of structural disease in the heart.) Finally, there are certain electrocardiographic manifestations which suggest the presence of heart disease. These include a well marked prolongation of the auriculoventricular time, bundle branch block, aborization block and certain deformities of the T waves and the ST intervals. Practically every patient with structural disease of the heart will be found on examination to present one or more of the manifestations that have been mentioned. Of them enlargement of the heart is the most common and the most important.

From the Department of Medicine, Vanderbilt University School of Medicine.

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THE RECOGNITION OF CONGESTIVE HEART FAILURE

The symptoms and signs of congestive heart failure are listed in table 2. They fall into two groups according to whether the congestion is in the pulmonary circulation (left-sided failure) or in the systemic circulation (right-sided failure). The most important manifestation of failure of the left side of the heart is dyspnea, appearing either on slight exertion or—more typically—at rest. However, heart disease is not the only disorder which causes shortness of wind. This symptom when appearing on effort is commonly due to obesity, emphysema, bronchitis, bronchiectasis, anemia or almost any debilitating disease. However, in many instances dyspnea is accompanied by weakness and fatigability, and the patient's chief complaint is of the latter symptoms. It is only when there is heart disease, abnormality of the lungs or marked obesity that dyspnea is likely to occur with slight muscular effort in the absence of weakness and fatigue. Shortness of breath at rest may be due to a psychoneurotic state (which is commonly associated with sighing rather than with panting); it may be due to bronchial asthma, to abnormalities of the trachea or bronchi, to accumulations of fluid in the chest or to acute infection in the lungs. Most of these conditions can be readily differentiated from the dyspnea of heart disease by the presence or absence of the signs just mentioned which point toward heart disease.

Attacks of dyspnea, usually occurring at night, constitute one of the most important manifestations of failure of the left side of the heart. Such attacks are of two types: (*a*) cardiac asthma, which sets in after the subject has been soundly asleep and which has to be differentiated from seizures of dyspnea due to bronchial asthma or to rarer causes of respiratory obstruction, and (*b*) Cheyne-Stokes respiration, which usually appears just as the subject sinks into sleep. Periodic breathing may occur in patients with cerebral hemorrhage, pneumonia, uremia, advanced cerebral arteriosclerosis and the like. However, it rarely leads to severe subjective respiratory distress except when the patient has congestive failure.

TABLE 1.—*The More Common Types of Heart Failure*

Major Type	Chief Physiologic Disturbance	Subtypes	Comment
Forward failure	Inadequate tissue blood supply (especially to the brain)	Sudden death	Angina pectoris
		Cardiac syncope	Adams-Stokes disease
		Cardiac collapse *	Acute myocardial injury
			Extreme tachycardia
			Mechanical hindrance
Backward (congestive failure)	Engorgement of vascular bed (pulmonary, systemic or both)	Left-sided failure	Pulmonary congestion
		Right-sided failure	Systemic congestion

* The clinical picture is like that of surgical shock except for evidence of congestion—either pulmonary, systemic or both.

Since dyspnea is the most important clinical manifestation of failure of the left side of the heart, this symptom needs to be investigated carefully, not only by questioning the patient concerning his sensations but by observations of the breathing during and after exercise. The exercise selected should usually be one which is just severe enough to make a normal person slightly conscious of his breathing. If the physician will walk at a moderately rapid rate up two or three flights of stairs with the patient and compare his own breathing with that of the patient, he will often obtain information which is a valuable supplement to the patient's statement with regard to his shortness of wind. This simple test is one of the most useful methods of examination of the heart, and it is even more important in persons with suspected angina pectoris than in patients with suspected heart failure.

TABLE 2.—*The Important Clinical Manifestations of Congestive (Backward) Failure*

I. Failure of left side of heart
  - Dyspnea
    - On exertion
    - Orthopnea
    - Cardiac asthma
    - Cheyne-Stokes respiration
  - Cough
  - Rales at lung bases
  - Diminished vital capacity
  - Prolonged pulmonary circulation time
  - Increased vascular shadows in lungs

II. Failure of right side of heart
  - Increased venous pressure and distended veins
  - Edema of dependent parts
  - Enlarged, tender liver
  - Cyanosis
  - Albuminuria
  - Prolonged peripheral circulation time

Coughing is a common symptom of failure of the left side of the heart. However, in this condition the dyspnea is usually predominant and the cough a secondary symptom. In bronchitis and many other diseases of the lungs the cough is more pronounced than the dyspnea. These rules admit of occasional exceptions, and one sometimes observes a troublesome cough—supposedly due to bronchitis—disappear completely following digitalization.

One of the errors commonly made in the diagnosis of heart failure is the assumption that the absence of rales in the lungs means that these organs are not congested. Actually, rales are a sign that the dyspnea has become severe enough to produce edema of the lungs, and in many cases a moderate degree of pulmonary congestion exists in the absence of rales.

Measurement of the vital capacity is a helpful procedure in the diagnosis of left-sided heart failure. In interpreting such measurements it should be remembered that normally the vital capacity is greater in men than in women, in the young than in the elderly, in thin persons than in fat persons, and that individuals who take considerable exercise usually have higher vital capacities than those who lead sedentary lives. It should likewise be borne in mind that many diseases other than those which affect the heart may reduce the vital capacity, common examples being emphysema and bronchiectasis. Because of these variables, a single measurement of the vital capacity is of relatively little value in the diagnosis of heart failure. However, repeated measurements are often quite helpful, especially when carried out before and after the use of therapeutic measures which have a beneficial effect in persons with congestive failure. A distinct rise in vital capacity following the administration of adequate doses of digitalis constitutes strong evidence that the decrease in vital capacity existing before the administration of the drug was the result of congestive heart failure. This simple procedure, coupled with an evaluation of the patient's statement with regard to the degree of dyspnea experienced on standardized effort before and after digitalis, constitutes one of the most helpful methods of diagnosing the mild degrees of pulmonary congestion in doubtful instances.

Among the other methods which are often of value in the diagnosis of failure of the left side of the heart are measurements of the pulmonary circulation time and study of the pulmonary vascular markings in the x-ray film.

The recognition of failure of the right side of the heart rarely presents difficulties if the failure is severe. The combination of marked edema of the lower part of the body, enlargement and tenderness of the liver in association with pronounced distention of the veins produces a characteristic picture. However, when these manifestations are quite mild, difficulties may arise. These difficulties can usually be overcome by attention to a few simple principles.

ence is not some arbitrary point on the chest wall but the posterior part of the vertebral column, which bears a fairly fixed relationship to the level of the auricle. The patient should lie on a flat table and the venous pressure should be measured as the vertical distance from this table to the point at which saline solution fails to descend into a needle in the antecubital vein. Measured in this way, the normal venous pressure is from 150 to 220 mm. of saline solution. Provided the subject has been at rest on the table for a number of minutes, is thoroughly relaxed, is not excited and is breathing quietly, a value of 250 mm. or more by this method represents an abnormally high venous pressure. However, such an elevation does not necessarily mean the

TABLE 3.—*The Differential Diagnosis of Failure of the Left Side of the Heart*

Condition	Signs of Heart Disease	Dyspnea			Cough	Sputum	Rales	Pulmonary Circulation Time
		Exertion	Orthopnea	Paroxysmal				
Failure of left side of heart	+	++	+	+	+	None, frothy (acute pulmonary edema) or blood (infarction)	Moist	Prolonged
Obesity	0	+	0	0	0	0	0	Normal
Anemia	Systolic murmur, loud sounds	+	0	0	0	0	0	Rapid
Bronchitis, bronchiectasis	None or slight enlargement of right ventricle	+	±	+	+++	Abundant or thick and tenacious	Dry	Normal
Lung tumors	0	+	0	±	++	"Raspberry juice" or none	None or unilateral	Normal
Pneumonia and other severe infections of lungs	0	++	0	0	+++	Rusty	Often unilateral or patchy	Normal

TABLE 4.—*The Differential Diagnosis of Failure of the Right Side of the Heart*

General Condition	Specific Condition	Elevation of Venous Pressure		Anasarca		Enlarged Liver	Cyanosis	Albuminuria	Signs of Heart Disease	Left-Sided Failure
		Cubital	Femoral	Edema	Ascites					
Failure of right side of heart	Any cause of heart disease	+	+	+ (dependent)	+ (often absent)	+ (tender, smooth)	+ (often absent)	+	+	+
Caval obstruction	Superior	+	0	Arms	0	0	Face, neck and arms	0	0	0
	Inferior	0	+	Legs	+ or 0	+ or 0	Legs and abdomen	+	0	0
	Nephrosis	0	0	++	++	0	0	+++	0	0
Hypoproteinemia	Nutritional (protein deficiency)	0	0	+	+	0	0	0	0	0
	Liver disease	0	0	+	++	+	0	0	0	0
Portal obstruction	Cirrhosis, portal thrombosis, etc.	0	+	+	++	Large or small	Abdomen only	±	0	0
Chronic peritonitis	Tuberculosis, carcinoma	0	+	+	++	Absent to marked	0	±	0	0

In evaluating the appearance of the veins one must remember that it is not the volume of blood in the veins but the pressure within these channels which is of importance in indicating failure of the right side of the heart. The vertical distance above the heart level at which the cervical veins collapse is therefore of more importance than the actual size of the vessels. Under normal conditions the cervical veins collapse at a point about 10 cm. (or less) above the auricular level. If the veins are distended at a point more than 15 cm. above the auricular level it is probable that the venous pressure is abnormally high, and such is certainly the case if these vessels are well filled 20 cm. or more above the heart level. In doubtful instances one should not be satisfied with the results of inspection but should measure the venous pressure. It has recently been shown by Burwell and his associates that for the purpose of such measurements the best point of refer-

presence of congestive heart failure, as it may be brought about by various conditions which increase the intrathoracic pressure, by disorders—such as aneurysms and mediastinal tumors—which compress the superior vena cava and by thrombosis of this vessel. Aside from congestive heart failure, the most common causes of increase in venous pressure are conditions, such as bronchial asthma, which interfere with the deflation of the lungs and which therefore elevate the intrathoracic pressure.

Although congestive failure is probably the most common cause of a significant degree of edema, it is by no means the only cause. Deficiency of the serum proteins due to inadequate protein intake (nutritional edema), to excessive loss (nephrosis) or to inadequate formation (certain diseases of the liver) may likewise cause general edema. Such patients are usually not dyspneic and hence lie flat in bed; the edema tends to

be more evenly distributed than of patients with heart disease, in whom orthopnea forces the patient to assume a position (sitting) which causes the greatest venous pressure to be exerted in the legs and abdomen, with a relatively small venous pressure in the face. Hence the patient with heart disease ordinarily has no edema of the face in comparison to the striking edema of the lower part of the body. However, this general rule admits of occasional exceptions, for in certain types of heart disease (tricuspid stenosis, constrictive pericarditis) there is usually little or no pulmonary congestion and therefore, since dyspnea is minimal, the patient may lie flat in bed and hence have edema of the face as well as of the lower parts.

The enlarged liver of congestive heart failure has to be differentiated from all other conditions that cause a large smooth liver. Such differentiation usually needs to be based on a consideration of the associated phenomena rather than on the physical signs concerned with the liver itself. In patients with right-sided heart failure of short duration and of progressive nature the liver is usually tender. However, if the enlargement has persisted for a considerable time the tenderness usually disappears. Occasionally the pain due to sudden enlargement of the liver resulting from heart failure may lead to a mistaken diagnosis of gallbladder disease.

Although cyanosis is not a constant feature of congestive heart failure, it occurs to some degree in many cases. It may be brought about by arterial anoxia as the result of pulmonary edema or emphysema, by distention of the small veins in the skin as the result of the increased venous pressure or by diminished circulation through the skin, especially when the heart failure is of sudden onset. The presence of cyanosis is therefore a suggestive sign of heart failure when the patient has other manifestations pointing toward it. The absence of cyanosis does not signify the absence of heart failure.

In tables 3 and 4 a summary is presented of certain points which are useful in differentiating heart failure from some of the more common conditions which may simulate it. The tables are not in any sense comprehensive but include only those conditions which are frequently encountered and which are especially likely to lead to confusion.

SUMMARY

There are several different types of heart failure, the most important of these being congestive heart failure. The diagnosis of this condition depends on finding evidence of heart disease plus evidence of congestion either in the pulmonary or in the systemic circuit. The most common important signs of heart disease are enlargement of the heart, diastolic murmurs and gallop rhythm. The clinical manifestations of congestion in the pulmonary bed consist of dyspnea (including orthopnea and paroxysmal dyspnea), cough, rales at the lung bases, diminution in vital capacity, prolongation of the circulation time and the appearance of increased vascular markings in the x-ray film. Failure of the left side of the heart is the most common type of congestive heart failure and usually precedes failure of the right side, which leads to edema, increase in venous pressure with distention of the veins, enlargement of the liver, cyanosis and albuminuria. No single sign of congestive heart failure is specific, as all the manifestations may at times be produced by other conditions. Hence the diagnosis cannot be made on the finding of any single phenomenon but rather must depend on a consideration of the entire clinical picture.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their elaboration, these articles were submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, the late Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft for publication. When completed, the series will be published in book form.*—ED.

THE THERAPY OF BARBITURATE POISONING

IN COLLABORATION WITH DR. RICHARD KOHN RICHARDS
NORTH CHICAGO, ILL.

The patient who suffers from barbiturate poisoning usually arives at the hospital in coma, with the reflexes and pupillary reactions retained or even exaggerated. The barbital pupil is usually dilated with normal or slightly delayed pupillary reaction (and it is small and reactionless only in extreme cases); the pupil of morphine poisoning is generally small and becomes dilated only shortly before death. In case of barbiturate coma quite frequently a rhythmic widening and narrowing of the pupil (hippus) is observed. Presence of hippus makes the prognosis somewhat more favorable than if there is no reaction present.

A simple test for barbiturates in the urine which is approximately quantitative has been described by Koppanyi, Murphy and Krop.[1]

Newer tests which are more accurate and less time consuming than the isolation of the crystalline material have been developed. A method based on the color reaction with cobalt is described by Brundage and Gruber.[2] A good modification has been worked out by Delmonico.[3]

The fatal dose is, in general, from fifteen to thirty times the therapeutic dose. The dose of barbital which is nearly always fatal is about 10 Gm., that of phenobarbital from 6 to 8 Gm. and that of dial about 2.4 Gm. The mortality rate may exceed 20 per cent. Symptoms of barbiturate poisoning generally continue for several days before death or recovery takes place.

When a patient is admitted to the hospital in the stage of coma, the following procedure should be carried out:

1. Evacuation of the stomach should be done, with the patient's head lower than the stomach (best carried out on the operating table to prevent aspiration of fluid overflowing from the stomach around the tube, with subsequent development of aspiration pneumonia). If trismus is present the duodenal tube should be passed through the nose. Lavage with Potassium Permanganate solution 1:5,000 may be useful against some barbiturates even when the poison has been taken many hours previously.

To clear unabsorbed poison from the bowel, sodium sulfate or sodium phosphate is preferable to magnesium sulfate, as reabsorption of magnesium during the coma might result in an increase of the depression and should be left in the stomach with Fluidextract of Cascara

Dr. Fantus died April 14, 1940.

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2. Brundage, J. T., and Gruber, C. M.: Determination of Barbiturates in the Blood and Urine, J. Pharmacol. & Exper. Therap. **59**: 379-392 (April) 1937.
3. Delmonico, E. J.: Tests for Derivation of Barbituric Acid, Proc. Staff Meet., Mayo Clin. **14**: 109 (Feb. 15) 1939.

Sagrada (16 cc.). The tube should be left in place. If no bowel movement is secured, this should be followed in a few hours by 30 cc. of Caster Oil. Enemas may be required in addition, and these might well consist of hot strong black coffee, any quantity of which retained also serves as an antagonist.

2. Postural drainage should be maintained continuously. The foot end of the bed is elevated to tilt the bed from 15 to 20 degrees, the patient's feet being tied to the end of the bed if necessary and the patient's head turned to the side. Secretions accumulating in the pharynx should be removed by suction. Insertion of an airway to prevent falling back of the tongue is advisable in any deep coma in addition to periodic removal of accumulated secretion in the pharynx. If the patient is cyanotic, and many of them are, oxygen should be administered by a nasal catheter. If the respiration is shallow, the administration of a few whiffs of carbon dioxide every half hour improves respiration and has a general analeptic effect.

3. Feeding should be done through the stomach tube at intervals of every four hours, with two cups of not excessively hot strong coffee with some milk. When a feeding is due, the stomach should always be evacuated of its contents before injection of the feeding so as to avoid overdistention of the stomach and possible overflow around the tube and aspiration into the lungs. One might be somewhat hesitant about feeding a patient in deep coma by stomach tube, since the postural drainage position in the stage of deepest depression may lead to regurgitation. Oral feeding should not be started before the vegetative reflexes are reestablished. In the meantime, parenteral fluid administration, dextrose with saline solution, should be given with judgment. Particularly, the development of a pulmonary edema should warn against a careless or excessive administration of fluids. Intravenous injections of hypertonic solutions, i. e., 25 per cent dextrose, are often helpful. What frequently appears to be pulmonary edema after the patient is admitted are really rales of accumulated mucus, which disappear if the patient is properly nursed.

It is a peculiar observation that patients with severe barbiturate poisoning soon start to have a high temperature even if no pulmonary complications are demonstrable.

4. An important part of the therapy consists of liberal administration of analeptic drugs, i. e., stimulants which counteract the depressant action of the barbiturates on the central nervous system. At present it seems that sufficient evidence has been collected to warrant the recommendations of picrotoxin as the most powerful stimulant in all cases of severe barbiturate poisoning. The drug should be given in doses of from 6 to 12 mg. intravenously, depending on the degree of coma. It is used as a 0.3 per cent solution, each cubic centimeter containing 3 mg. An interval of fifteen minutes should pass between two injections in order to account for the latent period inherent in this drug. Improvement of respiration, slight movements and moaning are the first signs of favorable response. In cases of severe poisoning, large doses have been given even before a diminution of the anesthesia is noticed. Slight twitchings of the facial muscles are a sign that the optimum effect of the drug is about attained. Under no circumstances should one try to induce complete awakening, since this might lead to convulsions. The long acting barbiturates are harder to overcome than the short acting group. Picrotoxin treatment should not be started without having a soluble-barbiturate such as, for instance, pentobarbital sodium, pentothal sodium or amytal readily available for intravenous injection in case severe convulsions develop. It is wise to stay sufficiently below the convulsion level and to be satisfied with improvement in respiration, restoration of the cough and swallowing reflex and production of spontaneous movements. All these factors start to prevent stasis and pulmonary complications which are the main danger in subacute barbiturate poisoning. If such a response has been produced, one may continue to give the drug at one half or one hour intervals intramuscularly. In case the coma deepens again, more frequent medication has to be resorted to.

Metrazol is a stimulant almost as powerful as picrotoxin but does not seem to be quite as prolonged in its action clinically. It has no latent period, and the maximum effect starts almost immediately after injection. Several cubic centimeters of the 10 per cent solution should be injected intravenously at intervals until the desired effect is reached. Afterward, intramuscular injection can be resorted to.

Nikethamide, which is a good respiratory stimulant, is definitely inferior to pictrotoxin or metrazol as an analeptic in stages of severe barbiturate depression. Strychnine Nitrate 2 mg. hypodermically every hour or two has been given until there is increased reflex excitability and this procedure is still recommended by several authors. Since strychnine, however, has primarily a spinal reflex action, it seems inferior to either picrotoxin or metrazol. Caffeine with Sodium Benzoate is not a very strong stimulant but it can be given in repeated doses of 0.5 Gm. intramuscularly because of its favorable effect on diuresis and the heart muscle.

5. Elimination should be cautiously assisted by 5 per cent dextrose phleboclysis to maintain free secretion of urine, but development of pulmonary edema should be watched for. Diuresis may be helped by a xanthine diuretic, e. g. aminophylline (Theophylline with Ethylene Diamine) in doses of 0.25 Gm. in 10 cc. of water, which may be given in the dextrose infusion, possibly every eight hours. Catheterization should be done every four to ten hours.

6. The body temperature should be kept from falling below the normal level by the application of external heat with great care to prevent burns. In conditions of subnormal temperature, heat is the greatest of all stimulants. It is a requisite to permit medicinal stimulants to act properly, and it may prevent the lowering of resistance that favors the development of pneumonia.

7. Artificial respiration with inhalation of oxygen should be instituted on the appearance of marked enfeeblement of respirations. Death from primary paralysis of respiration is, however, very rare. Death from primary failure of circulation occurs only in cases in which the heart is diseased.

In a serious case in which the blood pressure not infrequently drops to 80 mm. systolic, energetic treatment of the circulation appears desirable. One may give these patients at once 0.25 mg. of strophanthin-K intravenously and repeat this dose at twelve to twenty-four hour intervals for the first day or two if necessary. Ephedrine is also useful in raising the blood pressure. The injection of 1 cc. of solution of pituitary has been very helpful in imminent pulmonary edema. It raises the blood pressure and tightens the capillaries.[4] Digital-

4. Poulsson, L. T.: Ueber die exsudationshemmende Wirkung des Pituitrins, Arch. f. exper. Path. u. Pharmakol. **120**: 120, 1927. Tainter, M. L.: Comparative Antiedemic Efficiency of Epinephrine and Related Amines and Pituitary in Experimental Edemas, J. Pharmacol. & Exper. Therap. **33**: 129 (June) 1928.

ization should, if possible, precede the solution of posterior pituitary in order to insure sufficient reserve power for the heart to overcome the increased resistance. It is advisable in cases of deep coma to make a spinal puncture and to determine the spinal pressure. The pressure should be reduced in case it is elevated, since cerebral edema is one of the most serious complications of barbiturate poisoning. Intravenous injection of sucrose or, better, sorbitol, reduces intracranial pressure.

STAGE OF REACTION

Usually by the end of the first day the temperature rises, respiration becomes embarrassed, foci of pulmonary edema, congestion or consolidation develop, the blood pressure falls and the pulse becomes enfeebled. The pulmonary sequelae are probably in most instances the result of the general vasoparesis with or without subsequent infection. Nevertheless, everything should be done to prevent the possibility of a suspicion that they are due to aspiration or to chilling. The treatment is that of pneumonia (q. v.).

Great tendency to decubitus (q. v.), also due to vascular paresis, requires special precautionary measures.

Constant nursing care is imperative to give these desperately sick and helpless patients their best chance for survival.

Special Article

CONFERENCES ON THERAPY

MANAGEMENT OF DIABETIC EMERGENCIES:

II. TREATMENT OF SURGICAL PATIENTS AND CHILDREN

NOTE.—*These are actual reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with the collaboration of other departments. The questions and discussions involve participation by members of the staff of the college and hospital, students and visitors.*

DR. EUGENE F. DU BOIS: We are going to continue the discussion of diabetes with a contribution from Dr. Conway, who will discuss the surgical aspects.

SURGICAL ASPECTS OF DIABETES

DR. HERBERT CONWAY: In planning a surgical procedure for the diabetic patient, the exact state of the diabetes must be taken into consideration as a basis for the management of the preoperative treatment, the selection of the anesthetic and the type of operation. The diabetic patient, even though his disease is under medical control, must undergo greater surgical hazard than the nondiabetic person. There is a factor, which may be referred to as *x*, which operates against the welfare of the diabetic subject. It manifests itself in many ways. Wounds heal slowly. Tissues are nonresistant to infection. Pus dissects easily along fascial planes. Micro-organisms cause gangrenous sloughs in the tissues. Postoperative mortality rates for these patients are higher than for the nondiabetic. Surgery of the gallbladder, which is attended with an operative mortality of from 1 to 2 per cent, carries a mortality rate of from 6 to 7 per cent among the diabetic. Acute appendicitis shows greater virulence. Carbuncles, always serious, not uncommonly result fatally in the early postoperative period.

Gangrene of an extremity in association with diabetes is probably the most important complication with which the surgeon deals in the diabetic patient. Of a total of 1,333 patients admitted to the New York Hospital as diabetic during the past seven years, fifty-six, or 4.2 per cent, had gangrene of an extremity. In nineteen of these cases midthigh amputation was performed with nine deaths, a mortality of 47.4 per cent. In the same period (1932-1939) twenty-six patients who had arteriosclerotic gangrene with infection were subjected to midthigh amputation with only four deaths, a mortality of 15.3 per cent. The level of amputation for diabetic gangrene is determined after consideration of the extent of the infection, the state of the patient and the efficiency of the circulation. There are no completely satisfactory tests by which the ideal level for amputation can be determined. The saline wheal test (Stern), the histamine test (de Takats), nerve block (Morton and Scott), arteriography and the tourniquet test (Brooks) have not been found to be wholly reliable guides. There are, however, certain general rules which guide the surgeon. It is believed that simple amputation of the toe will be successful if the dorsalis pedis pulse is present, if there has been little pain and if the infection has not spread over the dorsum of the foot. Amputations through the foot have not been advised for the diabetic because the efficiency of the circulation at this level is not ideal. Amputations below the knee are not done unless there is evidence that the patient is of the type who can accept a prosthesis. Amputation should not be done below the knee if a pulsation cannot be palpated in the popliteal artery. Amputation through the knee joint (Gritti-Stokes) is not recommended for diabetic patients because the success of the amputation depends on the use of a flap of soft tissue in the region of the patella, a circulatory burden which is too great for the extremity of a diabetic person. In cases in which simple amputation of the toe is not successful, it has been necessary commonly to resort to the circular midthigh amputation.

DR. DU BOIS: There is nothing more important for the medical man than a knowledge of what surgery can offer in diabetes, and judgment is extremely difficult.

DR. EPHRAIM SHORR: I think it is of considerable importance for medical men to know what to do, if possible, about the prevention of surgical complications, and also what conservative measures are likely to prove of help.

DR. CONWAY: Conservative treatment consists in the application of dressings which should be dry. We usually put the patient in bed, with the leg at the level of the heart so that the circulation may be maintained with minimum difficulty. A cradle with electric lamps increases the vasodilatation, and moist dressings are avoided because they may activate the infection and convert what might have been dry gangrene into wet gangrene. We believe that forcing of fluids is essential in order to dilute the circulating stream of blood and diminish its viscosity. If there is no infection, the leg can be put into a glass boot in which alternate suction and pressure are applied. That is, we believe, a helpful method of arresting the advance of gangrene. But if infection is present, that device should not be used because it may promote the extension of the infection along the lymphatic channels. Minor incisions to drain accumulations of pus, or excision of an area of slough, may be necessary.

DR. SHORR: What about preventive measures? What do you tell diabetic patients, for instance, about their shoes, the care of their feet, the selection of their socks and so on?

DR. CONWAY: Most of this preventive work is carried out before they come under our observation. All of our nineteen patients who were subjected to mid-thigh amputation were admitted to the hospital in a state of emergency and had not had previous care. We believe, as Dr. Shorr does, that the condition is probably preventable. Care of toe nails is tremendously important. Ingrown toe nails should not be allowed to develop. The patients should be taught to cut their nails transversely and to pack cotton under them to prevent their growing into the epithelial surface. They are cautioned about injuring their legs, about the danger of cutting them, about being around gymnasiums or places where they might contract athlete's foot. If they contract athlete's foot, they are immediately put under treatment to prevent abrasion of the skin, which might provide a port of entry for infection. Frequently we advise shoes a size larger than they would ordinarily need, being careful that the foot does not rub in the shoe. We often advise heavy woolen socks to keep the lower extremities warm and promote vasodilatation. Some clinicians recommend a soft rabbit's fur lining for a specially made shoe. The other measures are the ones which are instituted in arteriosclerosis generally, involving exercises of the Buerger-Allen type, in which the patient puts his legs and feet through regular motions. Inunctions of the skin with hydrous wool fat, cottonseed oil or theobroma oil are of value in softening the skin and preventing the shiny tight surface which promotes abrasions.

DR. HARRY GOLD: How has insulin therapy changed the mortality in the class of patients discussed?

DR. CONWAY: All of our patients are managed in this institution by the combined efforts of the medical consultants and ourselves, and insulin therapy is instituted from the outset. The older surgical records show that this condition was usually fatal before the advent of insulin.

DR. DU BOIS: Dr. Tolstoi, have you seen gangrene develop in patients under what would be considered good control?

DR. EDWARD TOLSTOI: I have. I was going to ask Dr. Conway whether there is such an entity as "diabetic" gangrene, whether the entire process is not vascular, because we do not see it in young people at all even in severe diabetes. In young patients who are severely diabetic this particular lesion is conspicuously absent. From my observations two types of diabetic persons are prone to this complication: One is the individual in the fourth to the fifth decade who has arteriolar disease. The small vessels are involved. In this type of infection wet gangrene commonly occurs. There is no occlusion of a major vessel causing the extremity to shrivel and dry up. In the older group in the sixth to the eighth decade the major vascular accidents occur and with them dry gangrene. All these gangrenous lesions are associated with vascular disease and not so much with the diabetes.

DR. GOLD: Isn't it a fact, however, that vascular degeneration develops in the presence of diabetes rather rapidly and to a degree that is out of all proportion to that seen in similar groups without diabetes? In that sense wouldn't the term diabetic gangrene apply?

DR. TOLSTOI: We have limited our study to younger diabetic groups, taking roentgenograms of their leg vessels and studying their blood cholesterol. We have used all the criteria proposed by the group who postulate that diabetes disposes to arteriosclerosis. We have watched these severely diabetic groups now for a period of seven years, taking x-ray plates at intervals of six months, and we have been unable to note any calcific lesions in their vessels. On the other hand, I recall a diabetic woman 22 years of age whose symptoms were only two months old as far as we could ascertain, and the roentgenograms of her tibial vessels showed marked calcific deposits. With such facts it is difficult for me to accept the postulate that diabetes predisposes to vascular sclerosis. That view may have been tenable in the preinsulin era, but it certainly should be challenged today, to stimulate further studies in that direction. I wonder whether the study of a large control group under 40 might not lead to a reconsideration of the existing hypotheses. Enklewitz, of the Montefiore Hospital in this city, studied this question about five years ago. He questioned the role played by diabetes in the causation of atherosclerosis.

I would prefer to call the condition gangrene in the diabetic rather than diabetic gangrene. It may appear academic, but I do think there is a pathologic distinction.

DR. DU BOIS: I was particularly interested in this so-called *x* factor that Dr. Conway emphasized. I think it is real. Every one knows that diabetic patients do badly, but what is this factor? I don't quite believe it is high blood sugar, tissue damage or faulty metabolism. Does it persist after the diabetes has been under control? If a man has been severely diabetic and is brought under adequate control for six months or so, is that so-called *x* factor still present?

DR. CONWAY: I recall one case in which I thought the *x* factor had vanished because the patient went through primary healing after a surgical operation, but I believe it is present to some extent even after adequate control. I do not think that insulin therapy corrects everything in the diabetic patient as far as major trauma or surgical operation is concerned.

DR. DU BOIS: Can we get some dissenting opinion on that?

DR. TOLSTOI: I should like to voice a contrary opinion. I believe that the view that healing is delayed in the diabetic is a carry-over from the old régime. Dehydration was outstanding at that time. If the diabetic patient is hydrated and no infection sets in, healing will take place. Dr. Conway was good enough to do one or two surgical amputations for us on patients well hydrated and he expressed surprise at the satisfactory healing of the wound, though the patients were quite old. Sufficient fluid is the deciding factor.

DR. SHORR: I should like to suggest infection as probably the major difference between those showing an adequate response and those showing no response to treatment. Once infection has entered the picture, it has been our general experience that treatment of the diabetes is much less successful.

TREATMENT OF DIABETES IN CHILDHOOD

DR. DU BOIS: Dr. Harrison, will you discuss the special problems in connection with children?

DR. HAROLD E. HARRISON: The principles for the treatment of diabetes in childhood do not differ from those in adult life, but there are certain idiosyncrasies found in the younger age group which are worth mentioning. One factor is the greater incidence of diabetic acidosis among children. Diabetic children may come into the hospital three or four times a year with diabetic acidosis even though they have been apparently competently handled on the outside and seem to have been

doing fairly well in all respects. A minor infection, a dietary indiscretion or some apparently unknown factor may precipitate diabetic acidosis. Children are also more susceptible to hypoglycemic shock than adults. Frequent mild insulin reactions may occur if an attempt is made to regulate the diabetes so that the urine is practically free from dextrose.

The onset of diabetic acidosis may be sudden. Usually among the first symptoms of importance are nausea and vomiting, always a danger sign in the child. A mistake commonly made is the interruption of the administration of insulin as soon as the child stops eating or becomes nauseated and vomits, in the belief that it is dangerous to give insulin unless the child can take food. As a result the acidosis progresses and becomes more severe than would have been the case if insulin had been continued and given in small repeated doses, the urine being examined for dextrose to avoid overdosage and hypoglycemic shock. Children with diabetic acidosis may become extremely dehydrated. The dehydration is in part due to loss of water and electrolytes in the urine during the diuresis associated with glycosuria, and in part to vomiting. When a diabetic child begins to vomit it is frequently impossible to give fluids by mouth until the diabetic acidosis is under control. Fluids by mouth merely aggravate the vomiting. It is therefore advisable to stop all administration by mouth and to give all fluids parenterally. Because of the severe dehydration which occurs, the administration of adequate amounts of saline solution is important. In a rather large series of children with diabetic acidosis Hartmann found that the plasma volume of some patients was reduced to almost half of the normal value. This indicates an extreme state of dehydration. The use of insulin and dextrose has already been discussed adequately by Dr. Tolstoi, and their use in the diabetic child is the same as in the adult except that the dosage is regulated according to the size of the child and the severity of the diabetes.

It is commonly said that circulatory failure in the child does not occur as often as in the adult, who may have vascular disease as well as diabetes. Nevertheless, with marked dehydration circulatory failure may occur as a result of the depletion of the plasma volume. Large amounts of salt and dextrose solution given to an extremely dehydrated child with circulatory failure often fail to raise the blood pressure permanently. In those patients the use of blood transfusions may be a life-saving measure. If blood transfusions are not given promptly, the blood pressure may abruptly drop further, and then no treatment may be of any avail. Death usually occurs in children with diabetic acidosis as the result of circulatory collapse. Even severe acidosis should not often cause death, if the diabetic child is properly treated. Joslin reported seventy cases of diabetic acidosis in children with but one death. Hartmann reported a series of ninety cases of diabetic acidosis in childhood with five deaths. Most clinics have had similar experiences with children with diabetic acidosis properly handled. Nevertheless, many deaths do occur and could probably be avoided by the use of modern methods of therapy.

Finally, something should be said about the use of alkali in the treatment of diabetic acidosis. Ordinarily it is not necessary to use alkali. If adequate amounts of saline solution are given, if renal function is normal and if the circulation can be maintained, readjustments of the serum electrolyte picture will take place without the use of alkali. However, in cases of severe acidosis or when renal insufficiency is present, as it may well be in children with marked diabetic acidosis, administration of alkali restores the serum electrolytes to normal more rapidly than saline solution alone.

Hartmann has advocated the use of sodium lactate. He considers it preferable to sodium bicarbonate for two reasons: The sodium lactate is a more convenient solution to give parenterally. Secondly, it is only slowly converted into sodium bicarbonate, and he believes that there is no danger of alkalosis of any clinical importance through the use of sodium lactate. Darrow has used a solution of sodium chloride and sodium bicarbonate which can be given intravenously when required, and a mixture of this sort seems logical. However, these are refinements of technic. In most cases that one encounters they are not necessary if ample amounts of sodium chloride and dextrose solution or transfusions are given. The danger, of course, of the excessive use of sodium bicarbonate is that as the ketone bodies are oxidized there is an excess of base in the body and finally alkalosis may result. This can be avoided by a careful study of the patient and by the use of alkali in only moderate amounts.

STUDENT: In the adult it is customary to count on 2 Gm. of dextrose being oxidized by each unit of insulin. Is that ratio used to calculate insulin doses for children?

DR. HARRISON: That same ratio can be used for children. However, the value is a gross approximation only, and after the diabetic acidosis begins to improve 1 unit of insulin may oxidize much more than 2 Gm. of dextrose. If one were to use that value all along one might produce hypoglycemic reactions in the child. As the diabetic acidosis subsides the insulin apparently becomes more effective, and therefore much more carbohydrate should be given to cover the insulin dosage.

STUDENT: Are the reactions of the child more labile?

DR. HARRISON: Yes. The child is apt to have hypoglycemic reactions more readily than the adult, and the blood sugar may fluctuate more widely.

DR. DU BOIS: During infection or in diabetic coma how many units do you have to give to secure the oxidation of 1 Gm. of dextrose?

DR. HARRISON: That cannot be answered with precision. It is our experience that 100 units of insulin may sometimes be given without any apparent effect on the blood sugar for many hours.

DR. DU BOIS: Does that apply also to adults?

DR. TOLSTOI: Yes.

DR. CONWAY: How often do you see a death from diabetic coma in a child?

DR. HARRISON: In the large series that Hartmann reported the mortality rate was 5 per cent, and he felt that that rate could be lowered with his present methods of therapy. His series included patients observed during the past eight years.

DR. CONWAY: Does that apply here?

DR. HARRISON: I don't believe we have had any such deaths in this hospital during the past seven years.

DR. SHORR: Does the greater lability of the child's blood sugar level make the use of protamine zinc insulin more hazardous than in the adult?

DR. HARRISON: I don't think so, although it did seem at first that with protamine zinc insulin we observed extreme hypoglycemic reactions. Patients were found in comatose states in the morning, and it was very difficult to get them out of shock. However, now that

we do not attempt to get the urine free from dextrose, protamine zinc insulin can be used for children without any great hazards.

DR. SHORR: Proving helpful?

DR. HARRISON: Proving helpful in the elimination of multiple doses of insulin. It is more convenient in handling the diabetic child.

DR. ADE T. MILHORAT: Do you use gastric lavage for children who are vomiting and nauseated?

DR. HARRISON: It is an old pediatric custom to use gastric lavage when there is repeated vomiting, probably on the theory that in these children the stomach is dilated and filled with accumulated products which may irritate the mucosa and that their removal may help to allay the nausea and vomiting. Gastric lavage is done in such cases, and sometimes the children seem to stop vomiting immediately afterward. However, most of the time we discontinue fluids by mouth and do not resort to gastric lavage.

DR. VINCENT DU VIGNEAUD: How many cases were treated in Hartmann's series?

DR. HARRISON: Ninety cases.

DR. DU VIGNEAUD: With what mortality?

DR. HARRISON: There were five deaths in that series.

DR. DU VIGNEAUD: Was that broken down into the types of death? Were the patients all actually in acidosis?

DR. HARRISON: They all had severe acidosis. Two of the deaths were thought to be due to pneumonia, but the other three were apparently due to acidosis unsuccessfully treated.

DR. DU VIGNEAUD: I was wondering whether the patients died in acidosis or alkalosis?

DR. HARRISON: None of Hartmann's patients died in alkalosis.

DR. DU VIGNEAUD: We have heard much about the dangers of sodium bicarbonate therapy as compared with sodium chloride therapy, and I was wondering just how real this danger of alkalosis from sodium bicarbonate is.

DR. HARRISON: It is perhaps exaggerated. A chemical alkalosis may be produced in the sense that the plasma bicarbonate may be raised above normal, but clinically there may be no symptoms.

DR. DU BOIS: As to the various therapeutic agents that are mentioned as dangerous, such as insulin, protamine zinc insulin and bicarbonate, isn't it true that they are really quite safe when used intelligently?

DR. GOLD: Dr. Tolstoi regards a properly controlled diabetic patient as one who has no symptoms, who maintains an adequate body weight and who does not show acetone in the urine, although there may be a high blood sugar and the patient may be spilling a good deal of sugar in the urine.

According to the view presented by Dr. Shorr, diabetes represents an endocrine imbalance. The hyperglycemia and glycosuria are some of the indications of its presence. Even though they are in themselves not injurious, they nevertheless do reveal a state of metabolic imbalance which may involve injurious factors as yet unknown. In the present state of our ignorance, therefore, would it not be wiser to attempt to restore the balance even to the point of a normal blood sugar where feasible, in the hope of correcting possible disturbances in the metabolism of the diabetic which are not revealed by present methods? That would not be necessary, of course, if we were quite certain that progressive deterioration was not going on even while body weight was maintained and the patient was free from symptoms and acetone in the urine. But are we quite sure? I recall that we had arrived at no positive decision regarding the question raised by Dr. Du Bois as to whether the *x* factor persists in the so-called adequately controlled patient.

By way of illustration, if a patient is discovered to have diabetes with hyperglycemia and glycosuria, quite accidentally, as in a routine examination, and if he qualifies under Dr. Tolstoi's criteria for the well controlled diabetic patient, should one proceed to treat him only by repeated examinations to discover any change in his condition that might take place or should one do something more about it? I think that at the present time most doctors would proceed to give him some sort of diet and insulin if necessary, sufficient to control the glycosuria as far as possible.

DR. TOLSTOI: I would treat the patient as having mild diabetes. My final decision would, of course, be determined by what I learned about the patient after a period of observation. However, at the beginning I would suggest that he be given one dose of 20 units of protamine zinc insulin and put him on a liberal diet. Although he may not need the insulin at present, it would afford him some protection, since long experience has shown that the untreated diabetic patient tends to progress to ketosis and coma. Having afforded him this protection with protamine zinc insulin, I would be little concerned about the level of his blood sugar and the extent of his glycosuria.

DR. SHORR: We know little about what the possibilities in diabetes are; the cautious treatment recommended by Dr. Tolstoi is the safer one at present.

SUMMARY

DR. DU BOIS: Would you be willing to bring together the points outstanding in this conference, Dr. Gold?

DR. GOLD: We have considered today first the special problems of surgery in the diabetic. The experience here at New York Hospital illustrates the well known susceptibility of the diabetic to infections and the danger of infection when it occurs in such patients. The proper surgical procedure in gangrene of the extremity is a matter of skilled surgical judgment to which few fixed rules can be applied. We have also had an account of the application of some of the more conservative measures both during gangrene and for prophylaxis.

Insulin has reduced considerably the mortality of these patients, although its use has not altogether eliminated the complications. It is interesting to note that the role of diabetes in the causation of vascular degeneration, a matter which has been quite generally accepted, is now being subjected to new scrutiny and doubt. Adequate control of the diabetic as we now know it still seems to leave them deficient and less able to meet the situation in infection and surgery, although dehydration may be the chief cause of the trouble and these patients may encounter no difficulty if abundant fluids are administered.

In diabetes in children, greater difficulties seem to exist in the maintenance of a balanced state. Acidosis is more frequent. Again, the use of abundant fluids with sugar and salt is the most important measure. Alkalis, while not essential, restore serum reticulocytes more rapidly than saline solution alone.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

PRESENT STATUS OF INJECTION TREATMENT OF HERNIA

In September 1936 the Council on Pharmacy and Chemistry [1] published a report on the injection treatment of hernia based on the replies to a questionnaire which had been addressed to a selected list of hospitals throughout the country. The questionnaire sought information particularly as to the extent of this practice, its safety and effectiveness, the incidence of unfavorable complications, and the nature of such complications. After consideration of the replies the Council concluded that, although there are cases in which this treatment is applicable and effective, nevertheless it should be borne in mind that the attempted cure of hernia by the application of the method of adhesive inflammation is not new; that it had failed to establish itself as a routine method for such treatment and was still in an early experimental stage; further, that physicians who practiced this method should realize the dangers from an ethical, a legal and a financial point of view.

To keep the Council's information up to date on this subject, the same questionnaire was again addressed to those hospitals which formerly replied. The questionnaire appears at the end of this report.

In reply to the inquiry whether or not the injection method is practiced, affirmative replies have been received from the same hospitals which formerly stated that they used the method, except for one hospital which has now abandoned the method. The number of hospitals stating that they do not use the method remains the same as in the first tabulation; more hospitals seem to think the method is safe than unsafe, and more consider it ineffective than effective: in most cases the reply has been "effective only in selected cases." This would seem to agree with the consensus of the former report. In the 1936 report, it was stated:

> Replies, which were received from most of the institutions addressed, indicated that the method is not used in the majority of the hospitals consulted and that it is considered safe and effective by those using it, although many qualified their opinion as to safety and effectiveness by specifying careful selection of cases. Several unfavorable complications were recorded, including mild infections, the development of fibrous masses of cutaneous tissue, and failure of the method to correct the hernia. In addition, there were some instances of painful scarring, occasional cases of swelling of the testis, and a few instances of subsequent impotence. In two cases, gangrene followed the use of the method.

Replies to the second questionnaire include reports of induration of the spermatic cord, atrophy of the testicle, numbness of the leg, edema of the leg, severe pain at times, slight symptoms of shock, localized peritonitis, impotence and recurrence of hernia. One hospital also reports the observation of a number of complications which resulted from the use of too strong solutions and the use of proper solutions in too great quantities. This hospital also reports the observation of several sloughs resulting from the solution's being injected into the subcutaneous fat instead of beneath the fascia.

As before, several hospitals report surgical operations on some patients who had been formerly treated by the injection method.

The solutions recently reported as being used include a mixture of oil of thuja, phenol and alcohol; sodium linsoleate, sodium psylliate; tannic acid, and preparations of a proprietary character.

As indicated in the previous report, opinions vary as to the number of cases treated by this method in comparison to those treated surgically, but most of the hospitals now using the method report a rather low percentage of cases in which injections are given, such as "one injection to twenty surgical," "less than 50 per cent"; "5 to 10 per cent of those operated"; "8-10 per cent of cases subjected to this form of treatment"; "estimate it one to thirty-five"; "about 90 per cent [injection]"; "ten surgical to one injection." One hospital reports that the "majority of cases presenting suitable indication (indirect inguinal hernia with small defect) are treated by injection method."

The consensus expressed by comments in reply to the last question indicate that one hospital has abandoned the injection treatment of hernia since the first questionnaire was reported, and others have narrowed its application to a smaller number of cases. Many hospitals concur in the opinion that this method is suitable only for small reducible indirect inguinal hernias. In general the importance of using careful technic, relatively nonirritating solutions and adequate truss support is indicated. Other hospitals indicate that surgical repair is the method of choice, the injection treatment being reserved for those cases suited to this method in which patients could not or would not undergo surgical operation. In some instances evaluation of the injection method is withheld because of inadequate follow-up or insufficient lapse of time. Cooperation of the patient in the matter of truss wearing is considered an important factor in success. In those hospitals not employing the injection method for hernia (about 65 per cent of those consulted) various reasons are given: Its original use has fallen into disrepute over a period of years and abandonment of its employment as a regular procedure is evidence that the method has no permanent value; it was previously abandoned because it failed to give useful results; scar tissue, whatever the origin, is a weak tissue, nonresistant to tension; the method is unestablished and opens the field of hernia treatment to incompetents, and the method is considered unsafe or unsatisfactory.

A review of the literature [2] since publication of the last report reveals that the weight of evidence is preponderantly in favor of acceptance of the injection method of treatment of hernia in carefully selected cases. In general most observers agree that

1. Injection Treatment of Hernia, J. A. M. A. **107:** 1053 (Sept. 26) 1936.

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the injection treatment should not supplant surgery and, except in certain cases, does not offer as favorable a permanent result as the latter. Attempts to evaluate the two methods of treatment are frustrated by the lack of adequate follow-up records, with the additional difficulty that injection treatment has not been in use for sufficient time to permit accurate comparison. This is most frequently given as the explanation for a high percentage of cures with the injection method as compared to surgery. Percentages of failures or recurrences are unsuited for comparison for the same reason. Another difficulty is the matter of clinical decision whether or not recurrent bulging or impulse at the hernial site is evidence of insufficient number of injections or true failure of the method. The necessity for adequate follow-up is emphasized by many advocates of the injection treatment. Adherents of the surgical method point out that comparison of only eight to ten years' experience in the injection method with the much longer experience in surgical treatment is illogical and inconclusive.

Most observers indicate belief that the percentage of failures with the injection method will increase as adequate follow-up studies are reported. The majority state that they have observed no serious complications from hernias treated by the injection method and are generally agreed that relatively nonirritating solutions in skilled hands may be employed for certain cases with less potential danger than that of surgery. The criteria for safe and successful use of the injection method are given by various observers as follows:

1. Selection of Cases. Thin, young adults with good musculature. (Obese or aged individuals with atonic or atrophic supporting tissues are not suitable.)
2. Type of Hernia. Recent, small, reducible, indirect inguinal hernia with external inguinal ring not over 3 cm. in diameter. (Scrotal, direct inguinal, femoral, umbilical, ventral and incisional hernias are unsuitable. Sliding hernia associated with undescended testis and incarcerated hernias are contraindications.)
3. Truss Fitting. Skilled, adequate truss-maintained reduction before, between and after injections. (Incompletely or inadequately maintained reduction may occur with improper fitting or uncooperative patients.)
4. Injection Technic. Knowledge of inguinal anatomy and skill during injection are fundamental. (Surgical asepsis is, of course, imperative.)
5. Choice of Solution. Sterile, nontoxic fibrous tissue-stimulating, nonirritating solution is ideal. The fatty acid (soap) solutions approach nearest to these criteria. (Powerful sclerosing solutions are to be avoided and are believed responsible for many complications.)
6. Follow-Up. Repeated examination for periods of from six months to three years is necessary to determine length of treatment and period of truss wearing required for cure. (Inadequate treatment and truss support blamed for failures.)

After due consideration of the second hospital survey and the reports in the recent literature, the Council voted to adopt this report to reaffirm its previous opinion that the injection method of treating hernia may not be recognized for general use and should be employed only by those with special experience and with full cognizance of the dangers involved in the use of such solutions. The Council now concurs in the opinion that the method involves less danger of serious complications than surgery when employed only in selected cases of hernia by those skilled in the injection of suitable standardized solutions of known composition and action. The Council is not, however, willing to recognize any such solutions for New and Nonofficial Remedies until sufficient follow-up experience in their application has been gained to establish the success of the injection method of treatment. Present evidence indicates that better types of solution are to be desired.

In addition to the complications noted from the hospital surveys, the literature reveals case reports of death following perforation of the bowel from accidental intraperitoneal introduction of the needle, intestinal obstruction due to adhesions from inadvertent intraperitoneal injection or strangulation from failure to maintain reduction, perirectal abscess, fecal fistula and thrombosis of deep epigastric, iliac or femoral vessels. Most observers indicate that all serious complications can be avoided by skilful technic. The Council agrees and believes, therefore, that universal employment of the method is to be deplored. For this reason it is necessary that the Council condemn the exploitation of the injection treatment of hernia by manufacturers of solutions.

QUESTIONNAIRE

1. Is the injection method of treatment in hernia practiced in your hospital?
2. Do you consider the method safe and effective?
3. Have there been any cases of unfavorable complications?
4. What have been the nature of the complications?
5. Have you noted cases of impotence resulting from the injection method of treating hernia?
6. Have you records of gangrene or abscess formation following the use of the injection treatment?
7. If your staff feels the method is of value, what is the composition of the solution which it uses?
8. Do you know of any records of postmortem examinations indicating that death was due to the use of the injection method?
9. What is the ratio of the number of cases of hernia treated by the injection method in comparison to those treated surgically?
10. Any other comments?

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

ASCORBIC ACID (See New and Nonofficial Remedies, 1940, p. 530).

The following dosage form has been accepted:

McKesson's Ascorbic Acid Tablets, 25 mg.: Each tablet contains 25 mg. of ascorbic acid-N. N. R., equivalent to 500 international units of vitamin C.

Prepared by McKesson & Robbins, Inc., Bridgeport, Conn.

OLD TUBERCULIN (See New and Nonofficial Remedies, 1940, p. 473).

Lederle Laboratories, Inc., Pearl River, N. Y.

Tuberculin Patch Test (Vollmer).—Prepared by the method of Vollmer under U. S. patent 2,190,745 (Feb. 20, 1940; expires 1957). Filter paper squares, 10 by 10 mm., are saturated with concentrated Old Tuberculin prepared by growing tubercle bacilli on the synthetic medium recommended by the Bureau of Animal Industry. These squares are dried and placed on strips of waterproof adhesive, 1 by 3 mm. in size, together with a control square made by saturating filter paper with concentrated uninoculated broth of the same composition which is used for producing tuberculin. The assembled adhesive strips are placed in moisture proof cellophane envelops and sealed by heat. Marketed in packages each containing one complete test with control.

AMINOPHYLLINE-SEARLE (See New and Nonofficial Remedies, 1940, p. 557).

The following additional dosage forms have been accepted:

Tablets Aminophylline-Searle, 0.2 Gm. (3 grains).
Tablets Aminophylline-Searle, 0.2 Gm. (3 grains), Enteric Coated: The enteric coating consists of a mixture of mastic and magnesium stearate.

THIAMIN CHLORIDE (See New and Nonofficial Remedies, 1940, p. 528).

Thiamin Chloride-Squibb (See New and Nonofficial Remedies, 1940, p. 530).

The following additional dosage forms have been accepted:

Tablets Thiamin Chloride-Squibb, 3 mg.
Ampule Solution Thiamin Chloride-Squibb, 5 cc., 10 mg. per cc. 8-hydroxyquinoline sulfate 0.0025 per cent is used as preservative.
Ampule Solution Thiamin Chloride-Squibb, 5 cc., 25 mg. per cc. 8-hydroxyquinoline sulfate 0.0025 per cent is used as preservative.
Ampule Solution Thiamin Chloride-Squibb, 5 cc., 50 mg. per cc. 8-hydroxyquinoline sulfate 0.0025 per cent is used as preservative.
Ampule Solution Thiamin Chloride-Squibb, 10 cc., 10 mg. per cc. 8-hydroxyquinoline sulfate 0.0025 per cent is used as preservative.

The 8-hydroxyquinoline sulfate content of the foregoing solutions is determined as follows:

Add 0.1 cc. of ferric chloride test solution to 2 cc. of solution of thiamin chloride to be tested quantitatively for 8-hydroxyquinoline sulfate. Either dilute to 10 cc. or compare the color directly with a standard solution containing approximately 10 mg. of crystalline thiamin chloride and a known amount of 8-hydroxyquinoline sulfate (approximately 0.0025 Gm.) in 100 cc. of distilled water. The color is a bluish yellow green and group-characteristic for 8-hydroxyquinoline sulfate. It develops full intensity within two minutes and starts to fade after a period of six hours. The method is applicable to colorimetric analysis with an instrument, provided the concentrations are not too high. Thiamin chloride did not affect the determinations. The color development, however, depends on the hydrogen ion concentration. A *pH* of 3.0 to 5.0 is a favorable range.

The 8-hydroxyquinoline sulfate used as a preservative in Squibb's thiamin chloride solution conforms to the following standards:

8-hydroxyquinoline sulfate is a light yellow, crystalline substance, possessing a burning taste and characteristic saffron-like odor. It is easily soluble in water, dissolves with difficulty in alcohol and is insoluble in ether. The aqueous solution is acid to litmus. The melting point of the product is between 175-177 C. Add 1 drop of ferric chloride solution U. S. P. to 1 cc. of an aqueous solution of 8-hydroxyquinoline sulfate (0.1 Gm. in 10 cc. of water): a green coloration is produced. Add 1 drop of barium chloride solution U. S. P. to 1 cc. of an aqueous solution of 8-hydroxyquinoline sulfate (0.1 Gm. in 10 cc. of water): a white precipitate of barium sulfate is obtained. Add. 1 cc. of normal

sodium hydroxide to 1 cc. of an aqueous solution of 8-hydroxyquinoline sulfate (0.1 Gm. in 10 cc. of water): a white crystalline precipitate is formed, which, on filtration, careful washing with cold water and drying in a desiccator, melts at 75 C. The free base has a saffron-like odor at room temperature; on sublimation or steam distillation, a phenol odor is noticeable. The picrate of the free base melts at 203 C.; it dissolves with difficulty in cold alcohol and is practically insoluble in benzene. With ferricyanide, the free base forms a definite crystalline compound of yellow prismatic needles, soluble with difficulty in cold water.

Council on Foods

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

FRANKLIN C. BING, Secretary.

CANNED FRUIT PRODUCTS (*See* Accepted Foods, 1939, p. 70).

Tyrrell and Garth, Inc., Houston, Texas.

GARTH BRAND TEXAS MAGNOLIA BREAKFAST FIGS, canned fresh figs packed in a light refined corn sugar (dextrose) and cane sugar (sucrose) syrup.

Analysis (submitted by manufacturer).—Moisture 62.4%, total solids 37.6%, ash 0.2%, fat (ether extract) 0.1%, protein (N × 6.25) 0.5%, reducing sugars (as dextrose) 31.2%, invert sugar 22.8%, sucrose 8.0%, crude fiber 0.8%, carbohydrates other than crude fiber (by difference) 36.0%.

Calories.—1.47 per gram; 42 per ounce.

CHOCOLATE, COCOA AND CHOCOLATE FLAVORED BEVERAGE BASES (*See* Accepted Foods, 1939, p. 367).

Rockwood & Co., Brooklyn.

ROCKWOOD'S LOFAT BRAND COCOA, powdered cocoa containing not more than 1 per cent of cocoa butter, for special low fat diets.

Analysis (submitted by manufacturer).—Moisture 4.3%, total solids 95.7%, ash 6.1%, fat (ether extract) 0.4%, protein (nonalkaloidal N × 6.25) 25.2%, crude fiber 5.7%, carbohydrates other than crude fiber (by difference) 56.0%, total nitrogen (N) 4.7%, alkaloidal nitrogen 0.7%, organic nonalkaloid nitrogen 4.0%, total alkaloids 2.96,* theobromine (Wadsworth method) 2.62%,† caffeine by difference 0.34%.

Calories.—3.28 per gram; 93 per ounce.

FATS AND OILS (*See* Accepted Foods, 1939, p. 30).

A. P. Catsacoulis & Co., Metelin, Greece. Product distributed in the United States by Standard Products Co., Importer and Wholesale Grocer, Boston.

GLORIA BRAND PURE OLIVE OIL, the fixed oil obtained from ripe olives grown in the island of Metelin, Greece, conforming to U. S. P. standards for pure olive oil.

Analysis (submitted by manufacturer).—Specific gravity at 25 C. 0.912, index of refraction at 20 C. 1.469, saponification number 192, iodine number 85, acid number (cubic centimeters of N/10 alkali required to neutralize 10 Gm. of oil) 3.9, solidifying point of fatty acids 23.1 C, cottonseed oil absent, peanut oil absent, sesame oil absent, teaseed oil absent.

Calories.—9 per gram; 256 per ounce.

Conti Products Corp., New York.

CONTI BRAND VIRGIN OLIVE OIL, imported Italian first cold pressed olive oil (U. S. P.).

Analysis (submitted by manufacturer).—Specific gravity at 25 C. 0.910-0.915, refractive index at 25 C. 1.46, saponification number 192, iodine number 83.5, free fatty acids as oleic acid 0.30, solidification point of fatty acids 23 C., unsaponifiable matter 0.8, cottonseed oil none, Sesame oil none, rape seed oil (Valents test) none, tea seed oil none, peanut oil none, sulfur none.

Calories.—9 per gram; 256 per ounce.

FOODS FOR SPECIAL DIETETIC PURPOSES (*See* Accepted Foods, 1939, p. 295).

The Chicago Dietetic Supply House, Inc., Chicago.

CELLU BRAND BEET JUICE, canned beet juice expressed from mature, partially cooked beets, packed without added water, sodium chloride or sucrose.

Analysis (submitted by manufacturer).—Moisture 91.7%, total solids 8.3%, ash 0.57%, fat (ether extract) 0.1%, protein (N × 6.25) 0.6%, crude fiber none, invert sugar 1.1%, sucrose 5.1%, starch none, undetermined carbohydrates (by difference) 0.8%, carbohydrates other than crude fiber (by difference) 7.0%.

Calories.—0.31 per gram; 8.8 per ounce.

* Total alkaloids were determined according to the method of Moir, D. D., and Hinks, E.: The Determination of Total Alkaloids in Cocoa, Analyst **60:** 439 (July) 1935.

† Theobromine was determined according to the method of Wadsworth as described in Allen, A. H.: Commercial Organic Analyses, ed. 5. Philadelphia, P. Blakiston's Son & Co., 1933, vol. 7, p. 602.

GRAIN PRODUCTS (*See* Accepted Foods, 1939, p. 95).

Pillsbury Flour Mills Company, Minneapolis.

PILLSBURY'S WHEAT BRAN, heat-treated coarsely flaked milled bran.

Analysis (submitted by manufacturer).—Moisture 8.5%, total solids 91.5%, ash 6.5%, protein (N × 6.31) 17.2%, fat (ether extract) 3.5%, sucrose 4.5%, reducing sugars as dextrose 0.1%, crude fiber 10.5%, carbohydrates other than crude fiber (by difference) 53.8%, phosphorus (P) 1.48 per cent, iron (Fe) 9 mg. per hundred grams.

Calories.—3.15 per gram; 89 per ounce.

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

Beech-Nut Packing Company, Canajoharie, N. Y.

BEECH-NUT BRAND CHOPPED APRICOTS, canned, chopped, cooked apricots prepared from unsulfured dried fruit.

Analysis (submitted by manufacturer).—Moisture 73.9%, total solids 26.1%, ash 1.1%, fat (ether extract) 0.1%, protein (N × 6.25) 1.3%, crude fiber 0.9%, carbohydrates other than crude fiber (by difference) 22.7%, specific gravity 1.109.

Calories.—0.97 per gram; 28 per ounce.

Libby, McNeill & Libby, Chicago.

LIBBY'S BRAND HOMOGENIZED BABY FOODS FORMULATED COMBINATION NO. 8, containing bananas, apples and apricots with a small amount of added water.

Analysis (submitted by manufacturer).—Moisture 85.5%, total solids 14.5%, ash 0.5%, sodium chloride 0.04%, fat (ether extract) 0.01%, protein (N × 6.25) 0.5%, crude fiber 0.3%, carbohydrates other than crude fiber (by difference) 13.2%, calcium (Ca) 0.009%, phosphorus (P) 0.024%, iron (Fe) 0.0016%, copper (Cu) 0.00020%.

Report of titration test (1939) indicates that this product contains 0.022 mg. of ascorbic acid per gram, 0.62 per ounce. Protocols of biologic assay (1939) indicate that this product contains approximately 9 U. S. P. units of vitamin A per gram, 226 per ounce; and 0.13 Sherman-Bourquin unit of vitamin G (riboflavin) per gram, 3.7 units per ounce. Rat growth tests have demonstrated measurable amounts of vitamin B_1 (thiamin).

Calories.—0.56 per gram; 15.9 per ounce.

Libby, McNeill & Libby, Chicago.

LIBBY'S BRAND HOMOGENIZED BABY FOODS FORMULATED COMBINATION NO. 9, containing peas, spinach and green beans with a small amount of added sodium chloride.

Analysis (submitted by manufacturer).—Moisture 91.5%, total solids 8.5%, ash 1.1%, sodium chloride 0.6%, fat (ether extract) 0.1%, protein (N × 6.25) 2.3%, crude fiber 2.5%, carbohydrates other than crude fiber (by difference) 2.5%, calcium (Ca) 0.041%, phosphorus (P) 0.045%, iron (Fe) 0.0019%, copper (Cu) 0.00022%.

Report of titration test (1939) indicates that this product contains 0.047 mg. of ascorbic acid per gram, 1.33 per ounce. Protocols of biologic assay (1939) indicate that this product contains approximately 22.5 U. S. P. units of vitamin A per gram, 639 per ounce; and 0.25 Sherman-Bourquin unit of vitamin G (riboflavin) per gram, 7.1 units per ounce. Rat growth tests have demonstrated measurable amounts of vitamin B_1 (thiamin).

Calories.—0.20 per gram; 5.7 per ounce.

The Borden Company, New York.

BIOLAC, a modified milk for infant feeding prepared from whole milk, skimmed milk and lactose (the mixture being evaporated), with added thiamine hydrochloride, cod liver oil concentrate and ferric citrate and the whole homogenized and heat processed.

Analysis (submitted by manufacturer).—Moisture 73.0%, total solids 27%, ash 1.2%, fat 4.6%, lactose (by difference) 15.7%, protein (N × 6.38) 5.4%, available iron (*J. Biol. Chem.* **110:** 685 [Aug.] 1935) from 0.38 to 0.56 mg. per fluidounce.

Protocols of biologic assay submitted by the firm [1940] showed that the product contains not less than 125 U. S. P. units of vitamin A, 4.0 international units of thiamine and 21 U. S. P. units of vitamin D per fluidounce; 2,000 U. S. P. units of vitamin A, 65 international units of thiamine and 340 U. S. P. units of vitamin D per can (16 fluidounces).

Calories.—40 per fluidounce, 624 per can (16 fluidounces).

SUGARS AND SYRUPS (*See* Accepted Foods, 1939, p. 324).

American Syrup & Preserving Company, Nashville, Tenn.

CRYSTAL FLAKE BRAND SYRUP, a mixture of corn syrup and granulated sugar syrup, artificially flavored with vanillin and coumarin.

Analysis (submitted by manufacturer).—Moisture 23.5%, total solids 76.5%, ash 0.2%, protein (N × 6.25) 0.03%, reducing sugars before inversion (polarimetric method) 33.6%, reducing sugars after inversion (polarimetric method) 35.0%, sucrose (polarimetric method) 1.4%, dextrose (modification of Barfoed copper reduction method) (dry basis) 23.6%—fresh basis (calculated) 18.1%, maltose (dry basis) 35.2%, fresh basis (calculated) 26.9%, dextrin (by difference) 29.8%.

Calories.—3.05 per gram; 87 per ounce.

Heyl Brothers Company, Philadelphia.

HEYL'S BRAND TABLE SYRUP, consisting of 90 per cent corn syrup and 10 per cent cane refiners' syrup.

Analysis (submitted by manufacturer).—Moisture 21.7%, total solids 78.3%, ash 0.8%, nitrogen 0.015%, reducing sugar before inversion (fresh basis) 32.4%, total carbohydrates (by difference) 77.4%.

Calories.—3.1 per gram; 88 per ounce.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 17, 1940

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of the federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need, for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

FOOD AND THE WAR

The maintenance of the food supply of the army and of the civilian population of the country in a time of emergency is as important a question as any of the questions which may confront our leaders in times of rapid action and stirring events. In World War I every foreign country early appointed a food commission to control this problem. Early in 1917 THE JOURNAL emphasized the advisability of appointing at once in this country an appropriate scientific body to advise on such questions. The experience of many a foreign country after the war showed how inefficient and futile had been some of the considerations given to these vital problems. In the Netherlands and Denmark people were deprived of important sources of vitamin A in order that butter might be sold to other countries. As a result, numerous children developed xerophthalmia and similar conditions. In Germany the effects of malnutrition resulting from the blockade became apparent later in increased cases of tuberculosis among those who were children at the time of the war. Today German writers are emphasizing the necessity for control of nutrition as basic to the winning of any conflict.

It is no secret that problems of maintenance of the food supply are already serious in the warring countries. Indeed, Great Britain has begun a meatless ration for some of the days of the week, inclining largely toward a diet of eggs, milk and vegetables. In a recent communication a German writer points out that the German diet must depend considerably during the forthcoming months on bread and potatoes and that it is necessary under such circumstances that the bread be a whole grain bread. Recently British authorities have appointed a food commission to control food in the British army and among the British people, and already it has been decided to prepare a bread fortified with vitamin B_1 and calcium and to offer this for sale at a price similar to that for white bread. Moreover, British authorities have been urging cooperation of the Ministry of Food with the Ministries of Health and Agriculture to develop a national policy for control of the food supply.

In World War I the Surgeon General of the army early in the mobilization of the drafted army took steps leading toward the formation of a division in his office charged with the duty of advising on all questions relating to the nutrition of the soldier. The importance of nutrition was recognized early, yet the Quartermaster General was opposed to the establishment of nutrition officers in camp and it required six months before the Secretary of War authorized a food division for the army. The situation which confronts us today indicates the need for prompt action with regard to food and nutrition as a part of our current efforts toward preparedness. The National Research Council has a subcommittee on nutrition which is working on the problem of emergency and standard rations for the armed forces. The question of food for the soldier is still primarily in the division of the Quartermaster's office, but the Surgeon General of the army is equally concerned with the question of feeding the invalid soldier and with the feeding of troops for the prevention of illness. It is understood that two different divisions of the Advisory Commission on National Defense have set up subcoordinators who will be concerned with the problems of food. One of these divisions is that concerned with agriculture, the other that concerned with the consumer. There does not seem to be any evidence that any effort has been made to coordinate in any manner the work of these different advisory bodies, nor is it apparent from the evidence thus far available that modern dietetics and leading authorities in the field have been called into service.

The fundamental importance of good nutrition not only for those engaged in military services but for the population as a whole as the source of military units needs no argument in its behalf. What is needed is suitable coordination in Washington of all the various

bodies that will be concerned with the nutrition of the nation. Such coordination can be brought about properly only by adequate representation of medicine, which includes scientific nutrition, in the Advisory Commission on National Defense.

NEUROCIRCULATORY ASTHENIA IN SOLDIERS

The appearance of the second edition of Sir Thomas Lewis's "The Soldier's Heart and the Effort Syndrome" [1] focuses the attention of physicians once more on one of the most frequent causes of invalidism among soldiers. "Soldier's heart," "the irritable heart of soldiers," "disturbed action of the heart," "effort syndrome" and "neurocirculatory asthenia" is not a disease. It is rather a complex of characteristic neurovascular symptoms, which occur with sufficient regularity to justify grouping into a definite syndrome. This condition is not an organic disease of the heart or a clinical entity with definite pathologic appearances. Neither is it peculiar to war conditions. Modern warfare with all its horrors, the physical and emotional strain and the constant fear of death which it invokes is bound to reap a rich harvest of victims of neurocirculatory asthenia. The extension of the horrors of war to the civilian population multiplies the cases beyond measure. In the war of 1914-1918, Sir Thomas Lewis states, for every four wounded there was one cardiovascular case in the British Expeditionary Force. Seventy thousand had reported sick and were classed as cardiovascular by the summer of 1918, and 44,000 soldiers with effort syndrome became pensioners. Actually no more than one out of six of these soldiers suffered from disease of the heart. The rest represented cases of "effort syndrome."

MacLean in 1867 and Meyers in 1870 wrote of the "irritable heart of soldiers" in the British army, while Da Costa described its occurrence in our Civil War. Da Costa pointed out that the symptoms were frequently present before enlistment. He stressed fever, diarrhea, wounds and the arduous existence of the soldier as etiologic factors. He gave the advice "not to send back soldiers just convalescent from fevers or other acute maladies too soon to active work" and "that recruits, especially very young ones, be as far as practicable exercised and trained in marches and accustomed to fatigue before they are called upon to undergo the wear and tear of actual warfare."

To differentiate the condition from organic disease of the heart the English classified these cases as "disturbed action of the heart (D. A. H.)." The effect of suggesting "something wrong with the heart" in a condition of undoubted neurogenic character had anything but a salutary effect on the patients. For this reason, and because the symptoms resembled those of fatigue following effort in normal persons, Lewis gave it the name "effort syndrome." The name "neurocirculatory asthenia" was suggested by a team of medical reserve corps officers of the American army [2] sent to Colchester, England, to study the condition with Sir Thomas Lewis. They felt that the symptoms comprising effort syndrome in normal persons are not exactly the same as those observed in neurocirculatory asthenia.

While the basic mechanism of neurocirculatory asthenia has not been elucidated, the tendency of students of the syndrome is to regard it as psychogenic—a functional disorder of the autonomic nervous system. Given a neuropathic predisposition based on hereditary and constitutional inadequacy, many factors can assume the role of exciting or initiating agents. Among these, infectious or physical agents and the psychic strain of war are most important. The syndrome is characterized by dyspnea, fatigue and exhaustion, palpitation or heart consciousness, fainting, giddiness, headache, sweating, blueness or mottled coloring of the hands, dermatographia and a variety of neurovascular phenomena. The pulse at rest and in sleep is normal but is easily accelerated by emotion or exercise and is abnormally slow in its return to normal after exercise. Blood pressure is as a rule normal at rest but exhibits the same exaggerated response to exercise and emotion as does the pulse. The electrocardiogram does not reveal any structural changes. The symptom phosphaturia, so commonly observed in neurotic patients, is common especially after light exercise. The diagnosis of the syndrome presents few difficulties. Its differentiation from organic disease of the heart, however, calls for special training and experience in cardiology. The diagnostic problem likewise involves the recognition of possible associated disease such as pulmonary tuberculosis, exophthalmic goiter or malaria. The electrocardiogram, the roentgenogram and previous training and experience in cardiology should eliminate most of the earlier errors.

Undoubtedly the most important phase in the treatment of this condition is prevention. Prophylaxis should properly begin at the time of enlistment and in the training camps. The faulty examinations in the last war are clearly illustrated, as pointed out by Lewis, by the fact that nearly half the patients invalided for effort syndrome or heart disease developed the symptoms before joining the forces and more than half developed them before their training was complete. "There is not the slightest doubt," states Lewis, "that adequate examination would have eliminated most of these men, would have kept them in useful employment, would have spared them much suffering, would have saved hospital space and large funds of the Ministry of Pensions. Such cases were six or seven months in training, five months in hospital, and gave in return 2.2 months of full and 1.5 to two months light duty." Experience in the last war demonstrated that the

1. Lewis, Thomas: The Soldier's Heart and the Effort Syndrome, ed. 2. London, Shaw & Sons, 1940.

2. Oppenheimer, B. S.; Levine, S. A.; Morison, R. A.; Rothschild, M. A.; St. Lawrence, W., and Wilson, F. N.: Report on Neurocirculatory Asthenia and Its Management, Mil. Surgeon, April and June 1918.

prognosis on the whole was more favorable when treatment was instituted early. Prolonged rest in bed and digitalis had little if any effect on the course of the ailment. A correct psychologic approach to a condition with a pronounced mental aspect is essential to success. The patient above all must be reassured that he is not suffering from heart disease. The treatment of infections and of foci of infections is important. The regimen of graded exercises, as developed by Lewis, has been preeminently successful in restoring most of these patients to a more or less normal state. It has been useful both for sorting patients as to their reaction to exercise and in curing their symptoms. After a short rest in bed this regimen is initiated by short drills outdoors supplemented by hikes and games. The average stay at the hospital under this plan has been shortened from an average of 5.3 months to some five or six weeks.

IONIZED CALCIUM IN MILK

Much information is available about the inorganic salts of milk, but more is yet to be learned about the forms in which these constituents occur and the manner of their utilization by the body. In many respects our knowledge of the physical chemistry of milk is particularly incomplete. Clark,[1] for example, has pointed out that important mathematical constants which are essential to a thorough understanding of the buffer systems of milk are not available. Information about the equilibrium between the various forms of calcium and of the concentration of ionized calcium in milk is especially desirable. Such information not only is important to a thorough understanding of the physiology of milk secretion but also finds application in studies that might shed light on factors involved in the utilization of the calcium in milk.

Recently Nordbö,[2] with the help of ingenious methods, made a study of the concentration of ionized calcium, as well as magnesium, in cow's milk. The values calculated for the concentration of ionized calcium in the ultrafiltrate of milk approximate the values for total calcium in the ultrafiltrate of blood serum. While practically all the calcium in the ultrafiltrate of blood serum is present in the form of calcium ions, only 20 per cent of the total calcium in the ultrafiltrate of milk is present in the ionic form. It is remarkable that the concentration of citric acid and lactose in the ultrafiltrate of milk seems to be of the order of magnitude necessary to account for the non-ionized calcium as well as for the non-ionized magnesium. The combination of calcium with citric acid, as well as the rather unusual combination of calcium with lactose, results in the formation of non-ionized calcium compounds. These observations may explain how the risk of a loss of calcium through phosphate precipitation in the intestine is reduced. It also may be recalled that there is evidence that the presence of lactose in the diet favorably influences the utilization of calcium by the growing animal.[3] Moreover, there is evidence that lactose in the diet, in contrast to sucrose or dextrin, is able to prevent tetany in thyroparathyroidectomized dogs, an observation which supports the view that milk sugar may be important in calcium metabolism.[4] With regard to the effect of citric acid on calcium metabolism, it may be recalled that the addition of a citric acid and sodium citrate mixture to a rachitogenic diet can alter the diet to such an extent that it no longer produces rickets.[5]

In the presence of additional citric acid, cow's milk yields a more finely divided casein precipitate, and this phenomenon may be due to a suppression of the number of calcium ions present. As pertinently pointed out by Nordbö, if this is true a similar result might be obtained by the addition of extra lactose. In any case, the fact that lactose combines with calcium to form soluble, non-ionized compounds would seem to indicate that milk sugar, like citric acid, not only serves as a source of food energy but also is a factor in influencing the state of calcium in milk. This observation may well merit further study by those who are interested in learning more about the physicochemical properties of milk.

1. Clark, W. M., in Rogers, Lore A.: Fundamentals of Dairy Science, ed. 2, New York, Chemical Catalog Company, 1935.
2. Nordbö, R.: J. Biol. Chem. **128**: 745 (June) 1939.
3. Kline, O. L.; Keenan, J. A.; Elvehjem, C. A., and Hart, E. B.: J. Biol. Chem. **98**: 121 (Oct.) 1932. French, R. B., and Cogwill, G. R.: J. Nutrition **14**: 383 (Oct.) 1937.
4. Dragstedt, L. R., and Peacock, S. C.: Am. J. Physiol. **64**: 424 (May) 1923. Inouye, T., ibid. **70**: 524 (Nov.) 1924.
5. Shohl, A. T.: J. Nutrition **14**: 69 (July) 1937.

Current Comment

CLOTHING AND AIR CONDITIONING STANDARDS

The "double standard" of temperature for men and women complicates the problems of the engineer and increases the expense of heating and cooling office buildings. Women prefer higher temperatures than men for comfort not so much because of any difference in constitution as for the clothing they wear. Yaglou[1] undertook some unique experiments to establish this point. The mean skin temperature of women under ordinary conditions in a room of 71.5 F. and 30 per cent relative humidity with 20 feet per minute air movement was about 2 degrees Fahrenheit lower than that of men. The feet and hands of women averaged 5 degrees cooler than men's, while the trunk was only 0.5 degree cooler than men's. When most of the men in a room were comfortable the women generally were cold. To make the women comfortable the room temperature had to be raised to about 76 F.; then the men began to complain. When the men and women were dressed alike they were comfortable at about the same temperature. When both sexes wore a minimum of clothing, 84 degrees was satisfactory for both sexes. Men were dressed in women's summer clothing; then they demanded a temperature of 80 degrees, which was about the same as that preferred by women similarly

1. Yaglou, C. P.: The Significance of Clothing in Air Conditioning Standards, read before the annual meeting of the American Industrial Hygiene Association, New York, June 5, 1940. Distributed by the Air Conditioning & Refrigerating Machinery Association, Washington, D. C.

dressed. Women were dressed in men's winter clothes; then the comfortable air temperature for them went down to 70.5 F., or a degree lower than that preferred by men wearing the same clothes. In almost all instances comfort was associated with a mean skin temperature between 91.5 and 93 F. in both men and women, regardless of the air temperature, the amount of clothing and the season of the year in which the experiments were done. The mean surface temperature of the clothes and the exposed skin varied from 67.6 to 91.9 degrees under comfortable conditions. The wearing of additional clothes always increased the skin temperature of all parts of the body, the covered or the exposed, and decreased the surface temperature of the clothing worn. Yaglou concluded that differences in comfort standards between men and women are primarily due to differences in dress and can be reconciled by adjustments of clothing, according to susceptibility to cold or heat. If women in winter would dress in clothes comparable in warmth to those of men, they would be comfortable in temperatures of about 70 instead of 76 at present. If men would take off their coats, vests and collars in summer, buildings would not have to be cooled much below 85 degrees instead of 76 to 80 at present. Thus much of the difficulty experienced with sharp temperature contrasts between the sexes could be alleviated simply by adjustments of clothing.

ARCHIVES OF SURGERY ISSUES SPECIAL NUMBER HONORING DEAN LEWIS

The issue of the *Archives of Surgery* for August is a "Dean Lewis Number," prefaced with a photograph showing J. M. T. Finney, Dean Lewis and Harvey Cushing in 1926. The volume begins with a brief biographic note picturing Lewis as a master teacher with a marvelous personality, the product of the teaching of such masters as Billings, Herrick, Senn and Bevan in the medical school and Fenger, Harvey, Ochsner, Andrews and Harris in the hospital. Almost immediately after completing his internship, Dean Lewis became a teacher. He has traveled far and wide to lecture to medical societies, for which he has been constantly in demand. He has talked particularly about ductless glands, the transplantation of tissue, bone tumors, neurosurgery and the pathologic conditions affecting the breast. Wherever he taught before his retirement he was surrounded by admiring listeners, and his students at Johns Hopkins Hospital were constantly amazed at his mastery of his subject and his operative facility. It is not surprising that many leaders in the field of medicine and surgery should unite to do him honor. The special issue of the *Archives of Surgery* contains thirty-one scientific articles by notable investigators, teachers and clinicians whose places of residence reflect the entire nation and whose positions of leadership reflect all of medical science. Dr. Lewis was himself the editor of the *Archives of Surgery* from its establishment in 1920 until his retirement as editor emeritus last year. The preparation of the special number in his honor is a well merited recognition of his distinguished services as surgeon, investigator, teacher, author and editor.

Medical Preparedness

IN THIS SECTION OF THE JOURNAL EACH WEEK WILL APPEAR OFFICIAL NOTICES BY THE COMMITTEE ON MEDICAL PREPAREDNESS OF THE AMERICAN MEDICAL ASSOCIATION, ANNOUNCEMENTS BY THE SURGEON GENERALS OF THE ARMY, NAVY AND PUBLIC HEALTH SERVICE, AND OTHER GOVERNMENTAL AGENCIES DEALING WITH MEDICAL PREPAREDNESS, AND SUCH OTHER INFORMATION AND ANNOUNCEMENTS AS WILL BE USEFUL TO THE MEDICAL PROFESSION.

QUESTIONNAIRES RETURNED

Almost 180,000 questionnaires for the submission of personal information to be associated with any mobilization of the medical profession that may be required have now been put in the mails and, as we go to press, almost 80,000 of these have been returned. It is interesting to observe the varying percentages of physicians in various states who have replied. Nebraska leads all other states with more than 71 per cent, whereas New Mexico, Mississippi and Tennessee have made the smallest return. From week to week the record of returns will be listed, as it is highly important that there be a card in the system of every physician in the United States regardless of his ability to render military service.

Questionnaires Returned

State	Number Sent	Receipts Including August 9	Per Cent
Alabama	2,084	844	40.5
Arizona	590	302	51.3
Arkansas	1,818	709	39.2
California	11,810	4,792	40.6
Colorado	1,949	885	45.3
Connecticut	2,531	1,311	51.8
Delaware	333	159	47.7
District of Columbia	2,247	1,017	45.3
Florida	2,283	944	41.3
Georgia	2,831	1,297	46.0
Idaho	420	221	52.6
Illinois	12,306	5,883	47.8
Indiana	4,149	1,870	45.0
Iowa	3,059	1,682	55.0
Kansas	2,066	993	48.0
Kentucky	2,766	1,199	43.4
Louisiana	2,402	905	37.4
Maine	982	475	48.4
Maryland	2,971	1,235	41.6
Massachusetts	7,910	3,356	42.3
Michigan	6,374	2,769	43.5
Minnesota	3,505	2,218	63.3
Mississippi	1,500	551	36.7
Missouri	5,271	2,437	46.3
Montana	546	260	47.6
Nebraska	1,599	1,141	71.4
Nevada	106	76	45.8
New Hampshire	666	326	49.0
New Jersey	5,857	2,605	44.5
New Mexico	436	150	34.4
New York	27,165	12,200	44.7
North Carolina	2,732	1,052	38.6
North Dakota	519	289	55.7
Ohio	9,338	4,281	46.0
Oklahoma	2,363	1,012	42.8
Oregon	1,438	726	50.6
Pennsylvania	13,422	5,608	41.8
Rhode Island	953	391	41.1
South Carolina	1,401	520	37.2
South Dakota	504	315	62.5
Tennessee	2,915	1,038	35.7
Texas	6,932	2,626	37.9
Utah	574	299	52.3
Vermont	525	241	46.0
Virginia	2,903	1,290	44.5
Washington	2,188	1,029	47.0
West Virginia	1,847	770	41.7
Wisconsin	3,496	1,824	52.2
Wyoming	276	127	46.0
Miscellaneous	95	...	....
Alaska	77	9	11.7
Canal Zone	134	31	23.2
Hawaii	472	9	1.9
Philippine Islands	3,095	...	....
Puerto Rico	486	123	25.3
Virgin Islands	14	...	....
Totals	179,801	79,222	43.9

ORGANIZATION SECTION

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Change in Status.—H. R. 8613 has been reported to the House without amendment, providing that any person who served as a member of the Army Nurse Corps or of the Navy Nurse Corps during the World War and continuously thereafter until May 13, 1926, and who was, prior to June 20, 1930, separated from said corps by reason of physical disability incurred in line of duty, shall, on her application therefor, be entitled to be placed on the retired list of the Nurse Corps of which she was a member, her retired pay becoming effective on the date of receipt by the Secretary of War or the Secretary of the Navy, as the case may be, of such application or the date of enactment of this bill, whichever is later.

Bills Introduced.—S. 4224, introduced by Senator Sheppard, Texas, and H. R. 10278, introduced by Representative May, Kentucky, propose that in time of war or during an emergency declared by the Congress the Secretary of War may, in his discretion, dispense with any of the examination for promotion in the Regular Army of officers of the Medical, Dental and Veterinary Corps, except the physical examination. H. R. 10223, introduced by Representative Vinson, Georgia, proposes to authorize the Secretary of the Navy to establish naval hospitals at the naval air station at Jacksonville, Fla., and San Juan, Puerto Rico; the submarine base, Coco Solo, Canal Zone; the naval station, Guantanamo Bay, Cuba, and the Marine Barracks, Quantico, Va. H. R. 10239, introduced by Representative Courtney, Tennessee, proposes to authorize the Administrator of Veterans' Affairs to pay to Dr. H. A. Gant, Columbia, Tenn., the sum of $50 per month as long as he shall live. The bill states: "The said Dr. H. A. Gant rendered high public service in various yellow fever epidemics in the South, and certain statistics kept by him were of material aid to those engaged in the yellow fever investigations in Cuba in the establishment of the theory of the transmission of yellow fever by the mosquito. The said Dr. H. A. Gant is now of advanced age and totally and premanently disabled." The bill was referred to the House Committee on World War Veterans' Legislation.

MEDICAL ECONOMIC ABSTRACTS

HEALTH SERVICE SYSTEM OF SAN FRANCISCO

Managers of the Health Service System for municipal employees and the employees of the Board of Education of San Francisco have issued a first annual report covering fifteen months of operation of a plan covering 15,000 persons. The information which follows is taken from that report.

The membership was made up of 9,809 employees, 3,124 adult dependents and 1,817 minor dependents. This was an average monthly membership during a period when there was a steady increase in members. The premium for each employee and adult dependent was $2.50 a month. Minor dependents under 18 years of age were charged $1.50 a month, and each additional minor dependent $1 a month.

The percentage distribution of expenditures given in the first table was made from the total of the combined funds.

Of the total of $355,232.77 disbursed for medical care, approximately 68 per cent went for doctor service, 23 per cent for hospitalization and 9 per cent for x-ray, clinical laboratory examinations, ambulance and physical therapy.

Nearly a quarter of a million dollars was paid to doctors during the first year for the treatment of 10,696 individuals. This is 73 per cent of the entire membership. Sixty-seven per cent of the employees had the service of a doctor by the end of September 1939, and that percentage went up to 75 by the end of the calendar year. It was recognized that there was considerable abuse of the system. Nine hundred and eighty-six local doctors and ninety-four out of town doctors participated in the Health Service.

Percentage Distribution of Expenditures

Doctors	57.9
Hospitals	19.5
X-ray laboratories	3.8
Clinical laboratories	2.2
Ambulance	0.4
Physical therapy	1.3
Medical overhead	5.3
Nonmedical overhead	7.9
Equipment and alterations	0.5
Unexpended balance	1.2
	100.0

The chief complaint of the doctors has been that the monthly value of the unit of service was too low.

Thirteen hospitals received a total of $81,422.80 for the hospitalization of 1,500 persons during the twelve months ended Sept. 30, 1939. The average cost per case was $54.28.

Payment to the hospitals is made at the flat rate of $7.20 a day, regardless of the amount of service used. In some so-called "come and go" cases, in which the patient is confined only part of the day, the full daily rate is not charged.

Payment to Doctors and Value of Unit by Months

Month and Year (October 1938—September 1939)	Paid to Doctors	Value of Unit
October 1938	$13,452.00	$1.00
November 1938	17,603.50	1.00
December 1938	38,063.00	1.00
January 1939	17,940.75	0.50
February 1939	18,874.87	0.65
March 1939	17,801.04	0.50
April 1939	18,948.17	0.54
May 1939	19,543.34	0.57
June 1939	19,630.78	0.57
July 1939	19,174.62	0.66
August 1939	20,273.08	0.65
September 1939	20,451.42	0.67
Total	$241,756.57	$0.66

This entitles the patient to a ward bed, meals, general nursing care, floor supply of drugs and dressings, x-ray and clinical laboratory examinations, use of operating room, administration of anesthetic and various other services. A patient may select a private or semiprivate room by paying to the hospital the difference between the regular ward rate and the rate for any other room he may choose. Many patients chose the higher priced accommodations.

This year's experience has shown that the cost of providing hospital benefits was 46 cents per subscriber monthly, exclusive of overhead.

In November 1939 several changes were made in the plan. The rate of contribution for all minor dependents was raised to $1.50 a month and the following changes in the service were adopted to affect dependents only:

1. Treatment was limited to one year for any one condition, illness or injury.

2. The rate for minor dependents was increased to $1.50 a month regardless of the number enrolled by the employee.

3. In the future all dependents must have a medical examination before being admitted to the System and any pathologic

condition existing at that time will have to be corrected before the person is admitted; or the person may be admitted but the Health Service will not be responsible for the bills for treatment of that condition.

4. No minor dependent will be admitted until attaining the age of 1 year.

The number of office visits for either dependents or employees for which the Service will be responsible has been limited to five a month. This was a counter proposal to the one made by the doctors' committee that the patient be required to pay for the first two office visits and the first two home visits. Henceforth, all subscribers are to be restricted to the service of one doctor a month except with the consent of the medical director. This was to prevent patients from shopping around for the same condition. Refractions were also eliminated from the benefits beginning with Nov. 13, 1939. The fee schedule was revised to permit the general practitioner to receive more remuneration for his services.

The administration costs were 13.2 per cent, and it is believed that this can be reduced in the future. Demands of osteopaths and chiropractors and practitioners of drugless therapy for a right to practice under the plan are in course of litigation.

The average cost per employee member monthly for medical services is $1.87, adult dependents $2.28, and for minor dependents $2.05.

AUTOMOBILE AND MEDICAL EXPENSES

That the whole question of the ability to obtain medical care is confused with the fact that most people buy what they are sold rather than what they need is illustrated by a comparison of the expenditures among low income classes for automobile purchases and operation with those for medical care. Statistics are taken from a "Study of Consumer Purchases" issued by the United States Department of Labor, Bulletins 646 and 648. The middle sized cities in the West Central and Rocky Mountain districts are used for comparison because the bulletins mentioned presented figures from these two localities in comparable form (table 1).

In these cities the expenditures incurred by those who operated automobiles were as given in table 2.

The expenditures for medical care are given in a somewhat different manner but permit comparison (table 3).

TABLE 1.—*Percentage of White Families That Reported Automobile Ownership in 1935-1936, at Selected Income Levels*

Income Class	West Central	Rocky Mountain
$ 750-$ 999	38	65
$1,250-$1,499	66	76
$1,750-$1,999	72	79
$2,250-$2,499	77	86
$3,000-$3,499	85	78
$4,000-$4,999	90	94
$5,000 and over	89	78

TABLE 2.—*Estimated Average Total Automobile Expenditures Incurred by Automobile Operators, for White Families, at Selected Income Levels*

Income Class	West Central	Rocky Mountain
$ 750-$ 999	$ 78	$ 88
$1,250-$1,499	154	191
$1,750-$1,999	226	228
$2,250-$2,499	258	277
$3,000-$3,499	306	283
$4,000-$4,499	329	429
$5,000 and over	542	510

TABLE 3.—*Average Expenditures for Medical Care by Families*

Income Class	West Central	Rocky Mountain
$ 250-$ 499	$ 25	$ 42
$ 500-$ 749	26	38
$ 750-$ 999	44	64
$1,000-$1,249	51	67
$1,250-$1,499	51	93
$1,500-$1,749	83	85
$1,750-$1,999	87	92
$2,000-$2,249	113	112
$2,250-$2,499	84	111
$2,500-$2,999	104	103
$3,000-$3,499	108	139
$3,500-$3,999	167	107
$4,000-$4,999	129	201
$5,000 and over	230	194

DEATH RATES CONTINUE TO FALL

In spite of depressions, economic changes and social handicaps, death rates continue to fall. Comparisons of vital statistics between the United States and European countries are always unfair, owing to the fact that the United States is almost as large as the whole of Europe and presents an almost equal diversity of conditions. The true comparison should be between certain localities in the United States and similar ones in Europe. Recent reductions in infant mortality illustrate this point.

While the reductions for the entire registration area from 1933 (when for the first time all states were in that area) to 1939 (provisional rate) has been from 58 per thousand live births to 48, the latter figure by no means represents the situation in certain states where economic and medical conditions have had an opportunity to produce their best results.

In 1937 New Jersey was the only state to have an infant death rate below 40, the rate being 39. In the next year New Jersey was joined by Nebraska with a rate of 36 and Oregon with 39. The provisional rate for 1939, which is seldom changed much by later figures, shows thirteen states below 40, with the following rates:

Connecticut	36
Illinois	37
Indiana	39
Iowa	39
Kansas	39
Massachusetts	39
Minnesota	35
Nebraska	37
New Jersey	38
New York	39
Oregon	37
Utah	39
Washington	37

The tuberculosis rates show similar characteristics, the decline for the entire registration since 1933 (when all states were, for the first time, included) having been from 59.5 per hundred thousand of estimated population to 48.9 in 1938. In 1933, however, there were only four states with a rate below 30. These were Iowa 26, Nebraska 22.2, North Dakota 24.4 and Utah 21.8. In 1938, however, there were seven states with the following rates:

Idaho	22.1
Iowa	19.2
Kansas	22.9
Nebraska	16.6
New Hampshire	29.0
North Dakota	19.8
Utah	19.3
Wyoming	25.5

Perhaps the most significant feature of these statistics is the comparatively rapid decline of death rates in the states already having the lowest rate. Every student of vital statistics knows that as a usual thing, unless some specific method of treatment (as in the case of diphtheria) is discovered, the conquest of a disease is slower as the death rate declines. That this does not seem to be true with regard to tuberculosis would indicate that this disease is really on the way to join numerous other plagues that have ceased to be a significant threat to the life of mankind.

Compiled from Vital Statistics, Special Reports, Department of Commerce, Bureau of Census **9**: 835 (July 10), 853 (July 12) 1940.

WOMAN'S AUXILIARY

The National Meeting in New York

At the Eighteenth Annual Session of the Woman's Auxiliary to the American Medical Association in New York, June 10 to 14, Mrs. Rollo K. Packard, President, presided with Mrs. Carlton F. Potter as convention chairman. The following officers were elected for 1940-1941:

President, Mrs. V. E. Holcombe, Charleston, W. Va.
President-Elect, Mrs. R. E. Mosiman, Seattle.
First Vice President, Mrs. Charles H. Werner, St. Joseph, Mo.
Second Vice President, Mrs. Don A. Epler, Newark, N. J.
Third Vice President, Mrs. Eustace A. Allen, Atlanta, Ga.
Fourth Vice President, Mrs. Arthur C. Jones, Boise, Idaho.
Recording Secretary, Mrs. John L. Bauer, Brooklyn.
Treasurer, Mrs. David W. Thomas, Lock Haven, Pa.

The national membership is 23,524, with sixty-six new auxiliaries this year. Mrs. J. Emerson Noll, chairman of credentials and registration, reported that the registration was 1,321.

California

The Solano County auxiliary, the fourth county organized this year, recently held its first meeting at Vallejo. Dr. Robert Glass Cleland, vice president of Occidental College, was guest speaker of the Los Angeles County auxiliary, April 23. His topic was "The Historian Looks at the Future." Mr. Robin Lampson of the extension department of the University of California reviewed his latest book, "Death Takes a Pair of Wings," at the Santa Cruz County auxiliary recently. The Sonoma County auxiliary at its March meeting heard book reviews by three of its members on "Medicine at the Cross Roads," by Bertram M. Bernheim, M.D., "The Patient's Dilemma," by Dr. Hugh Cabot and a discussion on "Experimentation in Meeting Medical Needs by Voluntary Action" by Martin W. Brown.

Georgia

The woman's auxiliary to the Georgia medical society held its annual meeting in Savannah. Mrs. Eustace A. Allen, the president, reported that last year one new district and seven counties were organized. The membership was increased from 549 to 632 members, the largest paid membership the auxiliary has ever had. Two hundred and ten *Hygeia* subscriptions were obtained and 24,000 copies of health literature on tuberculosis, venereal diseases, heart diseases, cancer, communicable diseases, maternal and child health and malnutrition were distributed. Twenty-two radio health talks were sponsored and 200 announcement blotters and fifty posters of American Medical Association radio programs were distributed; 151 programs on self education on health subjects were held among county auxiliaries; 187 members held the chairmanship of health in other organizations; thirty-nine health films were shown throughout the state, at schools, parent-teacher meetings, orphanages, industrial groups and the like. Twenty-five dollars was contributed during the year to this fund. One hundred and eight public relations programs were sponsored. The student loan fund was increased by $209, making a total of $2,079.51 now available for medical students.

Indiana

The Vigo County auxiliary of Terre Haute, with a membership of seventy-eight, has for two years sponsored occupational therapy work in the two Terre Haute hospitals. The salary of the teacher and the materials used are paid for by the auxiliary.

Iowa

The woman's auxiliary to the Iowa State Medical Society held its eleventh annual meeting in Des Moines. Dr. John I. Marker of Davenport gave an address on "Character and Personality Development."

Michigan

At a recent meeting of the Bay County auxiliary, Dr. Otto Ehrlich, an intern in one of the local hospitals, spoke on the life and work of his uncle, Dr. Paul Ehrlich, noted scientist and discoverer of arsphenamine.

Minnesota

The eighteenth annual meeting of the woman's auxiliary to the Minnesota State Medical Association was held in Rochester. Malcolm McLean, Ph.D., director of the general college of the University of Minnesota, gave an address "Are the Schools on Trial?"

Missouri

Mrs. Paul F. Cole, president of the woman's auxiliary to the Missouri State Medical Association, in her annual report at St. Louis, recently stated that they were proud of their *Hygeia* record, having 155 more subscriptions this year than last year.

Oregon

Mid-Columbia County auxiliary entertained all women's groups in the district at a tea on May 16 at which Dr. John H. Fitzgibbon of Portland, delegate from Oregon to the American Medical Association, was guest speaker.

Texas

At the recent meeting of the Bowie-Miller counties auxiliary Mrs. Ralph Cross, president, presented each member with a cleverly arranged "report card" showing the member's attendance and the work done by the individual. The Bowie County auxiliary was awarded a prize of $30, given by Dr. Preston Hunt of Texarkana for the auxiliary having the greatest percentage of members who read the *Texas State Journal of Medicine*.

The twenty-second annual session of the woman's auxiliary to the State Medical Association of Texas was held in Dallas in May. Mrs. S. H. Watson, president, presided. Guest speakers were Mrs. Rollo K. Packard, President of the Woman's Auxiliary to the American Medical Association; Dr. L. H. Reeves, Fort Worth, president, and Dr. Preston Hunt, Texarkana, president-elect of the state medical association, respectively. Six new county auxiliaries and one new district were organized during the year, and one district was reorganized. Close to 500 subscriptions to *Hygeia* were sold.

Mrs. Scott C. Applewhite, San Antonio, has resigned as president of the auxiliary of the State Medical Association of Texas because of illness in her family; she will be succeeded by the first vice president, Mrs. William Hibbitts, of Texarkana. Mrs. Leslie Moore, Dallas, will serve as first vice president and Mrs. Ralph Cross of Texarkana as corresponding secretary. The state executive board meeting, scheduled to meet in July in San Antonio, has been postponed until September 10 and will be held in Fort Worth, with Mrs. Hibbitts as hostess.

Wisconsin

The woman's auxiliary to the Fond du Lac medical society at its meeting in May voted an appropriation for the girl scout troop which it sponsors and made plans to send several girls to summer camp. Money was donated to the Red Cross emergency fund.

Experiments in prepaid medical care in Douglas, Milwaukee and Rock counties were outlined by Mr. G. B. Larson, assistant secretary of the State Medical Society of Wisconsin in a lecture sponsored by the women's auxiliary to the Outagamie County Medical Society, May 27, at Appleton. More than 300 women representing the medical auxiliaries of Outagamie, Winnebago and Brown counties, as well as a large number of members of Appleton women's organizations, were present.

The Portage County Medical Society and the crippled children's division of the state department of public instruction recently conducted an orthopedic clinic at Stevens Point. Mrs. F. A. Marrs was in charge of local arrangements. Two hundred handicapped persons, ranging in age from infancy to the age of 21, were examined. Mrs. W. F. Cowan, another auxiliary member, was in charge of the noon luncheon, at which 370 persons were served.

Rock County auxiliary recently celebrated its tenth anniversary with a dinner in Janesville. Informal talks on the past history and future aims of the auxiliary were given by Mrs. C. N. Neupert of Madison, Dr. Jessie Allen of Beloit, Mrs. F. W. Pope of Racine, state president, and Mrs. C. A. Harper of Madison, present chairman of the archives and a past president of the state organization.

An auxiliary to the Sauk County Medical Society was organized, May 28. The wives of eleven physicians were present.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARIZONA

Harlow Brooks Clinical Conference.—The Fifth Harlow Brooks Memorial Navajo Clinical Conference will be held at the Sage Memorial Hospital, Ganado, August 26-28. Among the speakers will be:

Dr. Fred H. Albee, New York, Biophysiological Relations of Treatment in Fractures of the Neck of the Femur; also Mosaic Inlays and Peg Grafts in Reconstruction Surgery.
Dr. Max Thorek, Chicago, Electrosurgical Obliteration of the Gallbladder.
Dr. Henry H. Turner, Oklahoma City, Present Status of Endocrinology in General Practice.
Dr. Charles E. Futch, Los Angeles, Sinus Pathology: When to Operate.
Dr. William H. Daniel, Los Angeles, Infective Lesions of the Colon, as Ulcerative Colitis and Other Lesions.
Dr. Ralph F. Palmer, Phoenix, The Evolution and Present Status of the Relationship Between Organized Medicine and the Industrial Commission in the Administration of the Workmen's Compensation Law in Arizona.
Dr. Edwin Forrest Boyd, Los Angeles, Some Phases of Geriatrics.
Dr. Buell H. Sprague, Los Angeles, Some Unpublished Ideas on Thyroid Surgery.

CALIFORNIA

Credit Information Service.—A central medical credit information service is being organized by the San Francisco County Medical Society for the use of members. This unit is the first step toward establishing a medical business center operated by the society, making available various services to members.

Personal.—Dr. Edwin S. Bennett, for more than four years medical director of Olive View Sanatorium, Olive View, has been appointed superintendent of the Los Angeles County General Hospital.——Dr. Karl Chester Gummess, Los Angeles, has been appointed medical director for the state relief administration, succeeding Dr. Albert E. Larsen, San Francisco, who resigned recently to become medical director for the Agricultural Workers Health and Medical Association.——Dr. Frank B. Young, Long Beach, has been made a member of the state board of health.

Society News.—Dr. Martin W. Debenham, San Francisco, discussed "Immediate Suturing of Tendons in Traumatic Wounds" before the Plumas-Lassen-Modoc Counties Medical Society in Susanville recently.——The Yuba-Sutter Counties Medical Society has been reorganized and will henceforth be known as the Yuba-Sutter-Colusa Counties Medical Society. The new society was recently addressed by Dr. Sterling Bunnell, San Francisco, on "Reconstruction of Hands."——Dr. Arthur A. Marlow, La Jolla, discussed "Leukemia and Related Disorders of the White Blood Cell" before the Hollywood Academy of Medicine, July 11.

ILLINOIS

Health Exhibits at State Fair.—The state health department will present two new exhibits in its annual health exposition at the Illinois State Fair in Springfield, August 17-25, in cooperation with the Public Service Company of Northern Illinois. One will depict the hazards of night driving and the inability of the eye to cope with these hazards. Dioramas, transparencies, working models, apparatus, street and highway lighting units and the scientific equipment used in research on the subject will be shown. The other exhibit shows 2,000 years of progress in the evolution of resuscitation from drowning, gas asphyxiation and electric shock. Dr. Hart E. Fisher, Chicago, chief surgeon of the public service company, will be in charge. Other features of the health department's exposition will be free blood tests, medical examination of children, exhibits on "contact" diseases and nutrition. A motion picture program will be presented daily.

Chicago

Rural Health Service.—Dr. Edward A. Piszczek has been temporarily appointed head of a new county health service for unincorporated areas and villages in Cook County which have no public health facilities. According to the newspapers, July 19, the appointment was believed to be for sixty days, when a civil service examination is expected to be held to select a permanent head of the service. The new service was created in June with county and state funds.

Juvenile Home Psychiatric Department Installed.—New quarters for the department of psychiatry of the Juvenile Detention Home with expanded services in the treatment of these cases have been installed on the third floor of the court building at Ogden Avenue and Roosevelt Road, newspapers report. The new arrangement, under the direction of Dr. Paul L. Schroeder, state criminologist, will provide seven private offices for consultation with the youths brought in for mental examination, a staff office, ample space for clerical workers and records and waiting rooms. Instead of a large public waiting room, the waiting space has been divided into cubicles each accommodating four persons. Entrance to consultation offices will be private. All children will be given a physical examination in the court building instead of being taken to their neighborhood clinics as heretofore, making possible a complete medical and psychiatric report within twenty-four hours.

IOWA

Typhoid Carriers.—As a result of field investigations by the state department of health and efforts of attending physicians, five typhoid carriers have been brought under control in Iowa thus far in 1940, according to the state medical journal. In each instance an active case of the disease led to the suspicion of a carrier among the close contacts, it was stated. In one Iowa town several cases of typhoid were reported during the last two years. An investigation proved that a neighbor of the patients was harboring typhoid organisms.

Course on Care of the Newborn.—A three day postgraduate course on the care of the newborn will be held at the University Hospital, Iowa City, September 17-19, under the auspices of the state department of health and the State University of Iowa College of Medicine. The course will be limited to seventy-five physicians and no applications will be accepted after September 10. Lecturers will include:

Dr. Julius H. Hess, professor of pediatrics at the University of Illinois College of Medicine, Chicago.
Dr. Horton R. Casparis, professor of pediatrics at Vanderbilt University School of Medicine, Nashville, Tenn.
Dr. Irvine McQuarrie, professor of pediatrics at the University of Minnesota Medical School, Minneapolis.

Dr. Edward N. Anderson, Iowa City, football coach at Iowa, will speak Tuesday evening.

MAINE

Society News.—Dr. Wilfrid J. Comeau, Bangor, addressed the Aroostook County Medical Society in Houlton, June 13, on "Cardiac Drugs—Their Use and Abuse."——The Oxford County Medical Association was addressed in Bethel recently by Drs. George L. Pratt, Farmington, and Harry Eugene Macdonald Jr., Portland, on organization affairs and head injuries, respectively.——Dr. Neil W. Swinton, Boston, discussed diseases of the rectum and anus before a recent meeting of the Piscataquis County Medical Association in Guilford.

MICHIGAN

New Chief in Charge of Tuberculosis.—Dr. Thaddeus M. Koppa, member of the staff of the bureau of epidemiology, state department of public health, since February 1939, has been appointed director of the tuberculosis division of the bureau. The division was formerly in charge of Dr. Arthur W. Newitt, who is now director of the bureau of epidemiology. Before coming to Michigan, Dr. Koppa served as director of the bureau of communicable diseases of the Wyoming State Department of Health.

Pollen Survey.—Arrangements have been completed for the organization in Michigan of one of the first general pollen surveys ever sponsored by a state health department. Thirty-nine cities will participate in the program, which has the support of northern Michigan recreational centers and the tourist and resort associations. B. H. Grigsby, instructor in botany at Michigan State College, has been engaged by the laboratories of the health department to read the pollen slides which will be exposed daily at all of the thirty-nine survey stations. Rudolph Lang has been appointed field agent for the survey. Control stations are to be established in southern Michigan where the pollen pollution is known to be heavy, probably at Detroit, Flint, Lansing, Grand Rapids, Grand Haven, St. Joseph, Coldwater and Hillsdale. Data obtained from these stations will serve as a check on that obtained from northern

Michigan centers. The health department points out in its bulletin that knowledge of the types and the distribution of pollen throughout the state will aid hay fever sufferers in selection of resorts where relief may be obtained.

MISSISSIPPI

State Journal Honors Early Physician.—The *Mississippi Doctor* for July was dedicated to Dr. John W. Monette, Washington, 1803-1851, the first physician in the state to be placed in the Hall of Fame of the state department of archives and history. At the recent annual session of the Mississippi State Medical Association a special display of memorabilia concerning Dr. Monette was shown under the joint auspices of the medical library of the state board of health and the state department of archives and history. The exhibit included a life-size portrait of Dr. Monette and was presented to the hall of fame during special ceremonies by the state medical association. In making the presentation Dr. James P. Wall, Jackson, then president of the association, identified Dr. Monette as physician, trail blazer in the control of yellow fever, and historian. Judge Gerard Brandon, Natchez, grandson of Dr. Monette, presented a biographic sketch of the physician. Dr. Monette received his preliminary medical education from his father, Dr. Samuel Monette, also a physician. He completed his medical course at Transylvania University, Lexington, Ky., receiving his diploma on March 21, 1825. Although Dr. Monette wrote extensively on many subjects, his chief claim to distinction as a student and historian rests on his "Valley of the Mississippi," published in two volumes by Harper & Brothers in 1846. His greatest literary undertaking was his "Physical Geography of the Mississippi Valley." He died before the work was published.

NEW YORK

Transfusion Service Organized.—A complete transfusion service to make available better treatment and to make possible further research was inaugurated July 1 in the Hazard Laboratory of Memorial Hospital, Syracuse. The service will be available to the University, Memorial, City and Psychopathic hospitals under the direction of Dr. John B. Alsever. It was made possible by an initial grant of $5,000 from the Hendricks Research Fund of the Syracuse University Medical College. It will function on a twenty-four hour basis and will provide preserved adult blood, fresh adult blood, blood plasma and preserved placental blood. A list of blood donors will also be maintained, but it is expected that suitable preserved blood will usually be available, and the patients can repay the service by furnishing blood through friends and relatives, regardless of their blood group. Professional donors will be paid as at present, but otherwise patients will pay only a small service charge.

New York City

Theodore Weicker Dies.—Theodore Weicker, chairman of the board of E. R. Squibb & Sons, New York, pharmaceutical manufacturers, died in Greenwich, Conn., August 7, aged 79. Mr. Weicker, a native of Germany, came to America in 1887 and immediately became a citizen. On his recommendation the German firm of E. Merck established a New York branch, in which he was managing partner for fifteen years. Aside from conducting his business he took degrees in pharmacy and pharmaceutical chemistry. In 1905 he joined with the late Lowell M. Palmer to buy the business of E. R. Squibb & Sons, Dr. Squibb having died several years previously. At a time when the American market was flooded with nostrums and quack remedies, Mr. Weicker conceived the idea of an advertising campaign to the public under professional supervision to disseminate information about pharmaceutical products. He directed the campaign with the now widely known slogan "The priceless ingredient of every product is the honor and integrity of its maker," according to a statement issued at his death. The opening of the Squibb Institute for Medical Research at New Brunswick, N. J., in 1938 was the realization of a lifelong dream of Mr. Weicker, the statement said.

NORTH CAROLINA

Society News.—Dr. Virgil P. W. Sydenstricker, Augusta, Ga., will discuss pellagra before the Buncombe County Medical Society, Asheville, August 19.——Dr. John Shelton Horsley, Richmond, Va., addressed the Halifax County Medical Society, Roanoke Rapids, June 15, on cancer.——Dr. William Raney Stanford, Durham, addressed the Alamance-Caswell Counties Medical Society, Union Ridge, July 9, on "Idiopathic Ulcerative Colitis."

Plans for New School.—At a joint meeting of the trustees of the North Carolina Baptist Hospital and of Wake Forest College, July 18, contracts were let for the new Bowman Gray School of Medicine of Wake Forest College in Winston-Salem and additions to the hospital amounting to $701,572. It is estimated that it will take a year to complete the buildings. The school will also have a fifty bed hospital which has been leased to it by the Junior League of Winston-Salem for teaching and research in psychiatry. The school will assume responsibility for the professional conduct of the child guidance clinic conducted by the league.

OHIO

Dr. Dunham Honored.—Dr. Henry Kennon Dunham, Cincinnati, who recently retired as medical director of the Hamilton County Tuberculosis Sanatorium, was honored with a dinner, June 12, given by four organizations with which he has been identified: the Christmas Seal Committee of Cincinnati and Hamilton County, of which he is president; the Cincinnati Anti-Tuberculosis League; the faculty of the University of Cincinnati College of Medicine, and the staff of the sanatorium. Dr. Stanley E. Dorst was toastmaster and the speakers were Drs. Paul P. McCain, Sanatorium, N. C.; William Muhlberg and George E. Rockwell, Cincinnati; Robert G. Paterson, Ph.D., Columbus, and Col. Clarence O. Sherrill, city manager of Cincinnati. A plaque bearing a likeness of Dr. Dunham and a tribute to his efforts has been placed in the lobby of the sanatorium.

PENNSYLVANIA

District Meeting.—The Tenth Councilor District of the Medical Society of the State of Pennsylvania held a meeting in Pittsburgh, July 17. Clinics were presented at Mercy and Western Pennsylvania hospitals and at the Falk Clinic. Speakers on the scientific program were Drs. Henry J. John, Cleveland, on "The Treatment and the Progress of Diabetic Children" and William H. Guy, Pittsburgh, "Clinical Manifestations of Syphilis with Suggestions on Treatment." Dr. Nathan A. Kopelman, New Kensington, a member of the state society's committee on industrial health, discussed "The Present Status of Industral Medicine"; Dr. J. West Mitchell, Pittsburgh, reported the work of the commission on diabetes and Dr. John O. Bower, Philadelphia, a survey on acute appendicitis mortality by that commission. At a luncheon session Dr. Chauncey L. Palmer, Pittsburgh, discussed new state laws affecting physicians.

Philadelphia

Fellowships for Training in Criminal Psychiatry.—The joint medicolegal committee of the Philadelphia County Medical Society and the Philadelphia Bar Association announces that two fellowships for training in criminal psychiatry are open to candidates of suitable qualifications for terms of two years beginning in October. An appropriation of $14,000 from the Commonwealth Fund of New York has made possible the installation of the "Pennsylvania Plan" for intramural training in penal psychiatry, described in THE JOURNAL, July 13, page 135. The plan is to be administered by a committee representing three departments of the University of Pennsylvania —the department of psychiatry, the graduate school and the law school—and the Eastern State Penitentiary. Those interested in making application for the fellowships should direct their inquiries to Dr. Philip Q. Roche, secretary of the committee on medicolegal fellowships, 255 South Seventeenth Street, Philadelphia.

TEXAS

Society News.—Dr. Ralph Bowen, Houston, addressed the Jefferson County Medical Society, Port Arthur, June 10, on "Practical Management of Allergic Problems in General Practice."——Dr. Robert L. Moore, Dallas, lectured on pediatric subjects and Dr. Daniel Truett Gandy, Houston, on diagnosis and treatment of syphilis at a meeting of the Tenth District Medical Society in Liberty, June 28.

Personal.—Dr. John W. E. H. Beck, Austin, director of local health services with the state board of health for the past three years and previously director of maternal and child welfare for one year, has resigned to return to private practice in DeKalb, it is reported.——Dr. John M. Hooper, Austin, recently succeeded Dr. James J. Croley as director of the McKinney-Collin County health unit.——Dr. James H. Stephenson has resigned as superintendent of the Jefferson Davis Hospital, Houston, according to *Hospitals*. Dr. Sidney B. Hardy is acting superintendent. —— Dr. Berthold H. Estess, New Braunfels, is in charge of a new health unit for Jasper and Newton counties, with headquarters in Jasper.

WASHINGTON

State Medical Meeting at Tacoma.—The fifty-first annual meeting of the Washington State Medical Association will be held at the Winthrop Hotel, Tacoma, August 25-28, under the presidency of Dr. Warren B. Penney, Tacoma. Speakers at the scientific sessions will include:

Dr. Kenneth K. Sherwood, Seattle, Indications and Contraindications for Gold, Vitamin C, Sulfanilamide and Thiamine Therapy for Chronic Arthritis.
Dr. Lyle A. Greenwood, Bellingham, The Newer Drugs in the Treatment of Infections.
Dr. Simeon T. Cantril, Seattle, Malignant Diseases of the Head and Neck.
Dr. Milo T. Harris, Spokane, Carcinoma of the Uterus.
Dr. Edwin G. Bannick, Seattle, Newer Procedures in the Treatment of Pneumonia.
Dr. Cassius H. Hofrichter, Seattle, Clinical Evaluation of Standard Protamine Zinc and Crystalline Insulin.

The annual golf tournament will be held at the Tacoma Golf and Country Club Monday, August 26. The woman's auxiliary will hold its meeting parallel with the state association, with sessions at the auditorium of the Medical Arts Building.

PUERTO RICO

Influenza Epidemic.—The department of health of Puerto Rico reports a widespread epidemic of influenza on the island, reaching its climax in July. More than 52,000 cases were reported to the department in June and July. According to a report in the New York *Times*, there were about 200 deaths. Dr. John W. Oliphant of the U. S. Public Health Service was detailed to make an epidemiologic study and Dr. Edwin H. Lennette of the International Health Division of the Rockefeller Foundation is conducting research on the virus and other aspects of the disease.

University News.—The School of Tropical Medicine of the University of Puerto Rico under the auspices of Columbia University offered its third annual vacation course in tropical medicine for undergraduate students June 18 to July 26. Three students from the University of Cincinnati College of Medicine, two from the College of Physicians and Surgeons of Columbia University, New York, and two from the Long Island College of Medicine, Brooklyn, took the course, directed by Thomas J. LeBlanc, Sc.D., Cincinnati, in conjunction with George W. Bachman, Ph.D., director of the school of tropical medicine. Laboratory and field work occupied the first week; pathology, mycology and clinical features of tropical diseases the next four weeks, and one week was devoted to demonstration in the insular health department under the direction of Dr. Garrido Morales, health commissioner.

GENERAL

American Congress of Physical Therapy.—The nineteenth annual meeting of the American Congress of Physical Therapy will be held in Cleveland, September 2-6, with headquarters at the Hotel Statler. Mornings will be devoted to instruction courses, and scientific sessions will be held in the afternoons and evenings. Among the speakers will be:

E. K. Jett, chief engineer of the Federal Communications Commission, Washington, D. C., Radio Interference Problems Resulting from the Operation of Electromedical Apparatus.
Dr. Theodore G. Klumpp, chief of the drug division, U. S. Food and Drug Administration, Application of the New Food, Drug and Cosmetic Act to Therapeutic Devices.
Dr. William Bierman, New York, The Penetrative Effect of Cold.
Dr. George W. Crile, Cleveland, Normal and Pathologic Electrophysiology.
Dr. William F. Petersen, Chicago, The Effect of Cold, Heat and Weather on the Human Being.
Drs. Donald L. Rose, Walter M. Simpson and Herbert Worley Kendell, Dayton, Ohio, Artificial Fever Versus Combined Fever-Chemotherapy in Gonococcic Infections Refractory to Sulfanilamide.
Dr. Edgar V. Allen, Rochester, Minn., Treatment of Diseases of the Peripheral Blood Vessels.
Dr. Charles E. Irwin, Warm Springs, Ga., Mechanical Aids for the Severely Handicapped Poliomyelitis Patient.
Dr. Frank H. Krusen, Rochester, Minn., Present Status of Ultraviolet Irradiation.
Dr. Richard E. Reily, Minneapolis, Histamine Iontophoresis in Chronic Arthritis.

Included on the program of the section on eye, ear, nose and throat is a symposium on audiometry and hearing aids to be presented by Howard A. Carter, B.S. in M.E., secretary, Council on Physical Therapy, American Medical Association, Chicago; Drs. Charles E. Kinney, Cleveland, and G. Henry Mundt, Chicago.

Fake Insurance Salesman.—A Louisiana physician reports that a man posing as a "special agent" of the Mutual Benefit Health and Accident Insurance Company, Omaha, is visiting physicians who already have policies with this firm and selling them additional insurance. In reply to a complaint, the company informed the physician that the salesman described was not in its employ at this time and that other reports of his activities had been received. He appears to be operating in the Gulf Coast states. In the case reported he used the name "Amos L. Rogers." He appeared to be from 35 to 40 years old, weighed about 200 pounds and was about 6 feet tall.

Grants for Cancer Research.—The National Advisory Cancer Council at a meeting, June 25, at the National Cancer Institute in Bethesda, Md., awarded grants for research on cancer. The grants were: Washington University School of Medicine, St. Louis, $16,000; Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, $3,300; Barnard Free Skin and Cancer Hospital, St. Louis, $5,000; University of California Medical School, San Francisco, $5,000, and American College of Surgeons, Chicago, $5,900. Among reports presented at the meeting was a special one on protection of personnel working in cancer clinics against injury from exposure to radium, x-rays and neutrons, by Carl Voegtlin, Ph.D., chief of the cancer institute.

LATIN AMERICA

Society News.—The fourth Pan American Conference of Directors of Public Health will be held in Rio de Janeiro, Brazil, in 1942 and the fourth Pan American Conference of Leprology also in Rio de Janeiro in 1945.——Dr. Eduardo de Morais was recently elected president of the Medical Society of Bahia, Brazil; Drs. Eduardo Vidal da Cunha and Pedro Ferreira, vice presidents, and Jose de Figueiredo, general secretary.——The eighth congress of the Pan American Medical Association will be held in Buenos Aires in 1941 under the presidency of Dr. Jose Arce, Buenos Aires. Previous congresses have been in Habana, Panama, Mexico, Dallas, Antillas Menores, Rio de Janeiro and São Paulo and again in Habana. ——The International College of Surgeons will hold its next meeting in Mexico City, Aug. 10-13, 1941, according to an announcement in *Medicina* (Mexico).

CORRECTION

Acetanilid Instead of Acetophenetidin.—In the twelfth line of the editorial entitled "Double Barreled Self Medication" in THE JOURNAL, August 3, page 387, the word "acetophenetidin" should be "acetanilid."

Government Services

War Department Needs Pathologist and Veterinarian

The U. S. Civil Service Commission announces open competitive examinations for a pathologist (medical) and a veterinarian for the Chemical Warfare Service, War Department, Edgewood Arsenal, Md. The duties of the pathologist will be to examine specimens of pathologic tissue, to interpret and determine gross and microscopic changes produced in men and animals by chemical warfare agents and other toxic agents and to examine and interpret the physical effects of preventive and therapeutic measures for these changes. The veterinarian's duties will be to determine toxic effects as shown from gross pathologic changes induced by various agents in animals, to interpret the transfer of data obtained from animal experiments to man, to supervise the health and treatment of experimental animals and to perform related duties. Competitors will not be required to report for examination at any place but will be rated on the extent of their education, on the extent and quality of their experience relevant to the duties of the position applied for and on their fitness, on a scale of 100, such ratings being based on competitors' sworn statements in their applications and on corroborative evidence. For pathologist, applicants must have completed a four year college course with major study in biology or chemistry or must have graduated from a recognized medical school and must have had appropriate experience in pathology, either human or animal. For veterinarian, applicants must have a degree in veterinary medicine or meat inspection or disease control work. Detailed requirements and application forms may be obtained from the secretary of the board of civil service examiners at any first or second class postoffice or from the U. S. Civil Service Commission, Washington, D. C. Applications must be on file in the commission's Washington office not later than September 9, if received from states east of Colorado, and not later than September 12, if received from Colorado and states westward.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 20, 1940.

A Revolutionary Step in Diet: The Fortification of Bread

In the House of Commons Mr. Boothby, secretary to the Ministry of Food, stated that 90 per cent of our food imports were purchased by the government generally at little over prewar prices but that there was a substantial increase in the cost of transportation. Adequate supplies of meat for the masses at reasonable prices would be secured. Scientists said that meat did not have great advantages dietetically. That might be, but it had a psychologic value. It made people happy. When the threatened attack on these islands in the next few months was defeated we could increase the distribution of tea and sugar and perhaps fats during the winter months. To keep down the cost of living the government was subsidizing foods—bread and flour to the weekly rate of $2,975,000, home produced meat $1,575,000, bacon $500,000. In addition the milk scheme of selling below cost to poor families cost $37,500,000 per annum. We had stocks of food sufficient for many months in the unlikely event of heavy losses at sea.

THE FORTIFICATION OF BREAD

The minister then dealt with bread, about which there has been much controversy. He said that nutritional experts stressed the importance of wholemeal bread as compared with white bread. One reason why the manufacture of white flour had not been suspended was that most consumers preferred white bread. For security the government had greatly increased not only our stocks of wheat but also the proportion held in the form of flour. The keeping qualities of white were greater than those of wholemeal flour and therefore our reserve was kept in that form. To overcome the main objection to white flour—its deficiency in vitamins—the government intended to fortify it by adding vitamin B_1 and also to introduce a small quantity of calcium salt. Some months must elapse before sufficient vitamin B_1 was available. The public would then have the choice of fortified white bread or wholemeal bread at the same price. This was a revolutionary step and in conjunction with the milk scheme would lay the foundation of a nutritional policy. The decision to fortify white bread was taken after a report of the scientific committee under the chairmanship of Sir William Bragg (physicist and president of the Royal Society) had been received. It was a satisfaction that the government's import policy had been endorsed by the committee, but he hoped that this would not go to the heads of the scientists. The government had to consider the human man, who might get all the vitamins he required from a diet of vegetables, wholemeal bread, milk and cheese but would be most unhappy. He once attended an "Oslo meal" and came away full of vitamins, but that did not prevent a disturbed night. They were not cranks at the Ministry of Food. In war, food was the most fundamental and the most decisive factor.

Detection of Tuberculosis in Recruits

A medical advisory committee under the chairmanship of Lord Horder, appointed to report on methods of detecting early tuberculosis in men called up for military service, has made the following recommendations: 1. Every recruit at his examination by the medical board should be required to sign a declaration indicating whether or not he has suffered from tuberculosis. 2. District medical officers should be required to furnish a notification of every man of military age whose name appears on the registers kept under the public health (tuberculosis) regulations, so that this notification may be presented when he attends for examination. 3. The attention of medical boards should be directed to the value of x-ray examination of the chest in the detection of early cases of pulmonary tuberculosis, and they should be urged to use it in the case of recruits whose medical history or chest condition indicates even a remote possibility of the disease. 4. Medical boards should be advised to consider this special examination in cases of general ill health without definite clinical signs and also in those cases of effort syndrome in which there is no definite indication of psychic or cardiac cause. The committee inquired into the possibility of examining radiologically the chests of all recruits. For large numbers of men this could be done only by miniature radiography. While admitting that the method represents an ideal to be aimed at, the committee says that the necessary apparatus and a sufficient number of expert examiners would not be available for some months. The method is therefore impracticable at present. But the Admiralty and Air Ministry are about to make a trial of miniature radiography, and the committee awaits the results with interest.

Proposed National Scheme of Fracture Clinics

Since the war of 1914-1918, in which the late Sir Robert Jones was given direction of orthopedic surgery in the military hospitals, increased attention has been given to the treatment of fractures. In a memorandum to the Ministry of Health the British Hospitals Association proposes that the government set up a special committee to promote a fracture scheme in conjunction with the hospitals. The state is asked to make an initial grant of $1,250,000 toward the cost, and the association would draw up a plan to provide the nucleus of an organization and suggest the personnel. The government in 1936 set up a rehabilitation committee to consider the facilities available for the special treatment which cases of fracture require. In 1939 this body recommended a scheme for setting up fracture services throughout the country and made proposals which it hoped would enable the voluntary hospitals to finance them. The probability of heavy casualties is now thought to call for the intervention of the state in setting up such clinics. But it is held that it would be a mistake for the state to set up its own clinics otherwise than in cooperation with the voluntary hospitals, which treat 90 per cent of fractures of civil life. All that is required is reorganization and extension of existing services. Their fracture departments covering surgical treatment, physical therapy and remedial exercises would be placed under the control of a specialist with a team of assistants, radiographers and nurses. Special equipment would have to be provided.

It is calculated that the cost of setting up the additional fracture services at existing hospitals would be about $10 a case. This would not be the total cost of treating the fractures but the cost of improvement of the present services. The number of fractures treated annually at the hospitals is about 200,000 in peace time; in war time an increase to 500,000 is to be expected. Only eighty-six hospitals in Great Britain apart from twenty-four orthopedic hospitals have fully organized fracture services. Probably only 100,000 cases annually can obtain adequate treatment in fracture services at present. The immediate object is the establishment of a fracture service in each area. Other needs are rehabilitation or vocational training centers and settlements where those too incapacitated to resume their ordinary work can be housed and taught crafts.

The Bureau of Human Heredity

More than three years ago a Bureau of Human Heredity was established in London for the purpose of helping workers in human genetics. The chairman is Prof. R. Ruggles Gates, F.R.S. It now has a collection of books and reprints amounting to more than 3,000, which is indexed by a system of cross reference running to many thousands of cards, so that a worker

can easily turn up any point. Specialist inquirers can be quickly supplied with bibliographic references. The work of the bureau has automatically brought into being a comparative definition of terms used variously by different schools. A series of more than 7,000 terms occurring in genetic literature has been arranged in a synonym index, which could serve as a basis for a lexicon of terminology.

The work of the bureau has indicated the need for several investigations and has pointed the way to them. One is a complete collection and analysis of all material on genetics in relation to cancer, and the same holds for tuberculosis. In view of their importance these two surveys have begun. Some suggested investigations have special reference to the war. Among these are allergic conditions in connection with prophylactic inoculation of the fighting forces, neuroses under war strain, physiologic constitution in the choice of air pilots and constitutional factors in wound therapy.

BUENOS AIRES

(From Our Regular Correspondent)

July 5, 1940.

Regulations on the Appointment of Hospital Physicians

The selection of the medical personnel of municipal hospitals in Buenos Aires has now been regulated. The title of hospital physician will be accorded only to physicians of Argentine birth who have had experience in recognized hospitals. The order of advancement is as follows: assistant physician, associate physician, hospital physician, resident physician, head of hospital service and director of the hospital. Appointments are based on competitive examinations. Hospitals are divided into medical clinics, surgical clinics and the specialties, including the departments of orthopedic surgery and traumatology, neurologic surgery, child surgery, infectious diseases, tuberculosis, gynecology, ophthalmology, otorhinolaryngology, neurology, psychiatry, diseases of nutrition, diseases of the blood, dermatology and syphilology, proctology, radiology and physical therapy. The laboratories comprise laboratories for clinical and microbiologic analysis, for pathologic anatomy, hematologic laboratories and a central laboratory for clinical and microbiologic analysis and hygiene. The order of advancement is the same here as for the hospitals; the title, however, in each case indicates the connection with a laboratory. Physicians are assigned on the basis of one hospital physician to every twenty beds, one associate physician to ten beds or fewer and three assistant physicians to each associate physician. The central laboratories and those of the radiology and physical therapy divisions each have a head and in addition two hospital physicians, three associate physicians and five assistant physicians. The qualifications for the various hospital service orders have been worked out in detail. An examining board, consisting of the director of the hospital and two divisional heads, chosen by lot, pass on the training, degree and scientific contributions of the applicant. An associate is required to have had five years' experience as assistant in the specialty for which he is an applicant. The full hospital physician must have served five years as associate and must also submit to an oral examination that embraces both theory and practice of medicine. The examining board consists of five service heads. Only associate physicians of general surgery are admitted as candidates for the position of resident physician. They are also examined in operative technic. Appointments are valid for three years and may be renewed for two successive periods. They permit subsequent hospital connection as associates. A vacancy in the headship of a ward is open first of all to heads of wards of other hospitals. The examining board consists of the heads of five other wards who have served at least five years. It passes *inter alia* on the applicant's ability to organize the hospital and policlinic service, the conduct of hospital records, supervision of the rationalized nutritional needs of the patients, and so on. Any remaining vacancy is open to hospital physicians who have served more than five years in the same specialty. An examination is required covering a clinical case determined by lot twenty-four hours previously. If the vacancy is in the field of surgery, the examining board observes the applicant at work. The appointment is valid for ten years and may be renewed for five years more. The retiring age is 65. Hospital directors are selected on the same plan. If a vacancy remains, heads of wards with a ten year service are eligible.

Physicians who change their specialty are subject to certain regulations. They are appointed on competitive examination and are required to serve five years in the new specialty. The heads of the wards elect a clinical head from among the full or associate physicians, as the case may be. He serves for two years and is eligible for reelection. The head of the policlinic connected with the hospital must have the rank either of medical physician or of clinical head. Physicians may also be assigned on honorary appointments.

Postgraduate Lectures

The Asociación médica Argentina has organized on a more extensive plan the lecture courses offered last year. Sessions meet in the evening and are held monthly. A definite subject chosen for each evening service is discussed by experienced clinicians. In the first session recently held under the chairmanship of Prof. Carlos Mainini, its president, the sulfonamides were discussed. Prof. E. Hug of Rosario introduced the subject with a pharmacologic lecture. Subjects for future discussion include hypertrophy of the prostate, erythremia, endocrine preparations in ovarian disturbances, shock and collapse therapy in pulmonary tuberculosis. Similar lectures are given in the national policlinic for diseases of the digestive apparatus.

Personals

The Liga Argentina contra el reumatismo, under the presidency of Dr. Aníbal Ruiz Moreno, conferred honorary membership on Drs. Walter Bauer, Ralph Boots, Russel L. Cecil, Martin Henry Dawson, Richard Freyberg, Marshall Hall, William Kerr, J. Albert Key and Loring T. Swaim.

Under the auspices of the Argentine Radiologic Society (Sociedad Argentina de Radiología) the first radiologic congress will be held in Argentina September 23-24.

Prof. Angel H. Roffo, well known Argentine cancerologist, was made an honorary doctor by the University of Guatemala.

Prof. Evandro Chagas gave several lectures on visceral leishmaniasis in the institute of infectious diseases of the Faculty of Medicine of Buenos Aires.

Marriages

BEN ROLAND WILTBERGER, Detroit, to Miss Helen Elizabeth Slack of Columbus, Ohio, June 10.

DONALD DWIGHT COOPER, Towson, Md., to Miss Margaret Matthews of Roanoke, Va., July 15.

JACK CHESNEY, Knoxville, Tenn., to Miss Helen Wallace McColl of Bennettsville, S. C., July 20.

JOSEPH AUGUSTINE LUNDY, Oxford, Mass., to Miss Maude Marion McKewen of Worcester, July 17.

JAMES THOMAS GREEN to Miss Mary Wright Shand, both of Columbia, S. C., June 4.

NORMAN OLIN EADDY to Miss Dorothy Compton, both of Sumter, S. C., May 29.

HARRY GAMBILL STAMBAUGH, Ashland, Ky., to Mrs. Cleo Eubank Ehrlich, June 8.

ARTHUR A. DAVIDMAN, Rocky Mount, Va., to Miss Tamara Zanoff in Baltimore, July 7.

HENRY S. CHRISTIAN, Three Notch, Ala., to Miss Mae Hall in Midway, July 20.

Deaths

Sigard Adolphus Knopf ✠ New York; Bellevue Hospital Medical College, New York, 1888; Université de Paris Faculté de Médecine, France, 1895; professor of medicine, New York Post-Graduate Medical School, from 1908 to 1920; honorary director of the Gaylord Farm Sanatorium, Wallingford, Conn.; visiting physician to the Riverside Hospital from 1904 to 1923; consulting physician to Sanatorium Gabriels, Gabriels, N. Y., West Side Hospital, Scranton, Pa., and of the Bruchesi Institute, Montreal; a founder of the National Tuberculosis Association, and the New York Tuberculosis and Health Association; honorary member of the American Association for Thoracic Surgery; a government delegate to the International Prison Congress in Budapest and the International Tuberculosis Congress in Paris; vice president of section V of Tuberculosis Congress in Washington in 1908; delegate to the International Congress on School Hygiene in Buffalo in 1913; in 1898 received the Alvarenga Prize awarded by the College of Physicians of Philadelphia; in 1932 represented the United States at the congress of the International Union Against Tuberculosis at The Hague; served during the World War; author of "A History of the National Tuberculosis Association," and of "Heart Disease and Tuberculosis," published in 1936; aged 82; died, July 15, in the Mount Sinai Hospital.

Frederick Gault Finley, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1885; emeritus professor of medicine and at one time dean at his alma mater; past president of the Montreal Medico-Chirurgical Society; member of the Association of American Physicians; served with the Canadian Army Medical Corps during the World War; was connected for many years with the Montreal General Hospital of which he was consultant as well as of the Royal Victoria and the Children's Memorial hospitals; was chairman of the medical board of the Jewish General Hospital; aged 78; died, July 6.

Vaughan Quaine Bonham, Fayette, Mo.; University of Nashville (Tenn.) Medical Department, 1877; Vanderbilt University School of Medicine, Nashville, Tenn., 1883; member of the Missouri State Medical Association; past president of the Missouri Public Health Association; in 1910 was appointed registrar of birth and death certificates for Missouri; at one time member of the board of managers of the State Hospital, Number 1, Fulton, Mo.; aged 83; died, June 23, in the Lee Hospital of a fractured hip and chronic myocarditis.

Robert Roy Hampton ✠ Salt Lake City; College of Physicians and Surgeons, School of Medicine of the University of Illinois, Chicago, 1900; member of the American Academy of Ophthalmology and Otolaryngology, American Laryngological, Rhinological and Otological Society, and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; on the staff of St. Mark's Hospital; aged 65; died, July 12, of coronary occlusion.

P. Calixte Dagneau, Quebec, Que., Canada; M.B., Laval University Faculty of Medicine, Quebec, 1899, and M.D., 1901; dean and professor of surgical pathology, ethics and clinical surgery at his alma mater; past president of the College of Physicians and Surgeons of the Province of Quebec; was surgeon at the Hotel-Dieu from 1914 to 1927, when he became chief surgeon at St. Sacrament Hospital; was decorated by France and Italy; aged 63; died, June 28.

Frederick A. Speik ✠ Los Angeles; Rush Medical College, Chicago, 1907; fellow of the American College of Physicians; at one time professor of medicine at the College of Physicians and Surgeons, medical department of the University of Southern California; formerly chief of the department of medicine of the County Hospital; on the staff of the Collis P. and Howard Huntington Memorial Hospital, Pasadena; aged 58; hanged himself, June 30.

George Livingston Hays, Pittsburgh; University of Pennsylvania Department of Medicine, Philadelphia, 1895; professor of clinical surgery at the University of Pittsburgh School of Medicine; fellow of the American College of Surgeons; member of the Medical Society of the State of Pennsylvania; surgeon to the Mercy Hospital; aged 70; died, June 22.

Walter Wendell Fray ✠ Rochester, N. Y.; Harvard Medical School, Boston, 1922; assistant professor of radiology at the University of Rochester School of Medicine and Dentistry; member of the American Roentgen Ray Society and the American College of Radiology; on the staff of the Strong Memorial Hospital; aged 47; died, July 10, of leukemia.

John Harolde Turner ✠ Houston, Texas; University of Texas School of Medicine, Galveston, 1919; member of the American Urological Association; fellow of the American College of Surgeons; visiting urologist to the Baptist and Jefferson Davis hospitals; visiting urologist and assistant director of the Turner Institute; aged 45; died, June 1.

George Stuart Bower, Galesburg, Ill.; Northwestern University Medical School, Chicago, 1894; member of the Illinois State Medical Society; past president and secretary of the Knox County Medical Society; for many years county coroner; on the staff of the Galesburg Cottage Hospital; aged 71; died, July 14, of coronary thrombosis and hypertension.

Robert Woods Noble, Temple, Texas; Memphis (Tenn.) Hospital Medical College, 1887; member of the State Medical Association of Texas; formerly a member of the state board of health and for many years health officer of Temple; on the staff of the King's Daughters' Clinic and Hospital; aged 76; died, June 20, of acute coronary thrombosis.

Joseph Dayton Condit ✠ Pasadena, Calif.; Columbia University College of Physicians and Surgeons, New York, 1901; fellow of the American College of Physicians; served during the World War; on the staffs of the Huntington Memorial and St. Luke's hospitals; aged 63; died, July 5, of carcinoma of the stomach with peritoneal metastases.

George Driver Bragaw, Augusta, Ga.; Georgetown University School of Medicine, Washington, D. C., 1911; member of the American Psychiatric Association; on the staff of the Veterans Administration Facility; aged 54; died, July 1, of coronary thrombosis and arteriosclerosis following a laminectomy.

Ira N. Pickett, Odell, Neb.; Indiana Medical College, Indianapolis, 1878; member of the House of Delegates of the American Medical Association in 1905-1906; member and past president of the Nebraska State Medical Association; aged 87; died, June 18, of myocarditis and cerebral hemorrhage.

Cecil Edward Ross, Erie, Pa.; Western Reserve University School of Medicine, Cleveland, 1931; member of the Medical Society of the State of Pennsylvania; member of the board of directors of the Erie County Tuberculosis Hospital; on the staff of St. Vincent's Hospital; aged 37; died, June 26.

John Irwin Zerbe ✠ Franklin, Pa.; Medico-Chirurgical College of Philadelphia, 1907; county coroner; past president and secretary of the Venango County Medical Society; served during the World War; on the staff of the Franklin Hospital; aged 61; died, June 16, of coronary thrombosis.

James Stewart Archibald ✠ Danville, Ill.; St. Louis University School of Medicine, 1908; served during the World War; on the staff of St. Elizabeth's Hospital; formerly on the staff of the Decatur and Macon County Hospital, Decatur; aged 57; died, July 17, of coronary thrombosis.

Robert Francis Jones ✠ Medical Inspector Commander, U. S. Navy, retired, Savannah, Ga.; University of Virginia Department of Medicine, Charlottesville, 1909; entered the navy in 1911 and retired in 1937 for incapacity resulting from an incident of service; aged 54; died, July 4.

James G. Muir, Milford, Neb.; Lincoln Medical College of Cotner University, 1898; member of the Nebraska State Medical Association; served during the World War; aged 62; died, June 29, in the Veterans Administration Facility, Lincoln, of coronary arteriosclerotic heart disease.

James Stephen Maher, New Haven, Conn.; Yale University School of Medicine, New Haven, 1896; member of the Connecticut State Medical Society; past president of the city board of health; for many years on the staff of the Hospital of St. Raphael; aged 68; died, June 8.

John James Collins ✠ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1898; served during the World War; aged 68; for many years on the staff of St. Mary's Hospital, where he died, July 8, of hypertensive heart disease and chronic nephritis.

John R. Gillette, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1892; formerly member of the state legislature and member of the county and city school boards; aged 73; died, July 15, at his summer home in Yardley, Pa., of coronary thrombosis.

Robert Eugene Golden, Walla Walla, Wash.; University of Oregon Medical School, Portland, 1904; member of the Washington State Medical Association and the Pacific Coast Oto-Ophthalmological Society; veteran of the Spanish-American War; aged 64; died, June 30.

Edward Clayton Davis, Philadelphia; Temple University School of Medicine, Philadelphia, 1910; member of the Medical Society of the State of Pennsylvania; formerly assistant professor of bacteriology at his alma mater; aged 63; died, June 10, in the Northeastern Hospital.

Charles Fallis Hewins, Oakland, Calif.; Long Island College Hospital, Brooklyn, 1882; University of Pennsylvania Department of Medicine, Philadelphia, 1890; aged 83; died, June 27, in the Providence Hospital of bronchopneumonia and coronary occlusion.

John Henry Charles Willoughby, Dundas, Ont., Canada; Victoria University Medical Department, Coburg, 1884; at one time postmaster in Saskatoon and member of the board of trustees of the school board; formerly mayor of Regina; aged 78; died, May 22.

John Thomas Corr, Racine, Wis.; Rush Medical College, Chicago, 1896; member of the State Medical Society of Wisconsin; served during the World War; aged 70; died, June 5, in St. Mary's Hospital of carcinoma of the colon and cardiac decompensation.

Robert Lee Yeager ⊕ Mineral Wells, Texas; University of Texas School of Medicine, Galveston, 1898; past president and secretary of the Palo Pinto County Medical Society; on the staff of the Nazareth Hospital; aged 68; died, June 19, of septicemia.

Jennie Sharp Sharp, Camden, N. J.; Woman's Medical College of Pennsylvania, Philadelphia, 1895; member of the Medical Society of New Jersey; formerly member of the board of education; aged 67; died, June 21, in Haddonfield.

Homer Sylvester, Madison, Wis.; University of Pennsylvania Department of Medicine, Philadelphia, 1895; served during the World War; on the staff of the Mendota (Wis.) State Hospital; aged 71; died, June 11, in a local hospital.

Le Grand Spaulding, Kennewick, Wash.; California Medical College, San Francisco, 1902; College of Physicians and Surgeons of San Francisco, 1906; member of the Washington State Medical Association; aged 65; died in June.

Buford B. Jones, Metter, Ga.; University of Georgia Medical Department, Augusta, 1904; member of the Medical Association of Georgia; for many years chairman of the board of education and mayor; aged 66; died, June 26.

William Turner Ray, Charlotte, N. C.; University of Maryland School of Medicine, Baltimore, 1934; member of the Medical Society of the State of North Carolina; police surgeon; aged 37; died, June 16, of heart disease.

August C. Huebner, Onaway, Mich.; Michigan College of Medicine and Surgery, Detroit, 1896; member of the Michigan State Medical Society; aged 67; died, July 1, in the Blodgett Memorial Hospital, Grand Rapids.

John T. Henderson, South Euclid, Ohio; Cleveland Homeopathic Medical College, 1900; aged 75; died, July 10, in the Huron Road Hospital, East Cleveland, of injuries received in an automobile accident.

Earl G. Grover ⊕ Ashland, Ohio; University of Louisville (Ky.) School of Medicine, 1921; aged 46; died, July 2, in the Hurley Hospital, Flint, Mich., following an operation for gangrenous cholecystitis.

Russell Smith Clymer, Andrews, Ind.; Indiana University School of Medicine, Indianapolis, 1928; aged 38; died, July 15, at the Methodist Hospital, Indianapolis, of injuries received in an automobile accident.

Edward Carroll James Jr., White Plains, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1925; member of the Medical Society of the State of New York; aged 40; died, June 4.

Onie Ann Barrett, Wakeman, Ohio; University of Wooster Medical Department, Cleveland, 1893; Cleveland Medical College, 1893; aged 68; died, July 4, in the Norwalk Memorial Hospital, Norwalk.

William Frank Edmonds ⊕ Seattle; State University of Iowa College of Medicine, Iowa City, 1904; aged 64; died, July 3, of injuries received in an automobile accident near Twin Falls, Idaho.

J. Roma Tremblay, Montreal, Que., Canada; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1897; aged 68; was found dead, June 23.

William Asher La Ross, McDonald, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1891; past president of the Washington County Medical Society; aged 72; died, June 16.

William L. McBrien, Staunton, Ill.; St. Louis College of Physicians and Surgeons, 1898; on the staff of St. Francis Hospital, Litchfield; aged 75; died, July 10, of carcinoma of the bladder.

D. N. Twyman, Appomattox, Va.; Medical College of Virginia, Richmond, 1905; member of the Medical Society of Virginia; aged 63; died, June 25, of malignancy of the esophagus.

Samuel Warren De Long, Tingley, Iowa; Ensworth Medical College, St. Joseph, Mo., 1907; aged 76; died, June 9, in the Greater Community Hospital, Creston, of heart disease.

Frank Beaty Wilson, Winter Haven, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1901; served during the World War; aged 61; died, June 26, of pneumonia.

John Leonard Jennings Sr., Danville, Va.; Southern Homeopathic Medical College, Baltimore, 1900; aged 64; died, July 7, in the Memorial Hospital of coronary occlusion.

Burrell Brade Liles, Houston, Texas; University of Louisville (Ky.) Medical Department, 1910; member of the State Medical Association of Texas; aged 63; died, June 28.

Bernard D. Verret ⊕ Rolla, N. D.; M.B., Laval University Faculty of Medicine, Quebec, 1898, and M.D., 1900; formerly county health officer; aged 64; died, May 26.

Charles Clinton Morris ⊕ Paducah, Ky.; University of Louisville Medical Department, 1910; served during the World War; aged 60; died, June 30, of coronary thrombosis.

Simon Peter Earnest ⊕ Delmont, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1890; for many years member of the board of education; aged 75; died, July 11.

Merle Barbee, Torrington, Wyo.; St. Louis College of Physicians and Surgeons, 1906; served during the World War; aged 60; died, July 10, of cirrhosis of the liver.

Robert Emmet Owen, St. Louis; Marion-Sims College of Medicine, St. Louis, 1901; served during the World War; aged 62; died, June 22, of coronary occlusion.

Edwin J. West, Easton, Pa.; Hahnemann Medical College and Hospital, Chicago, 1891; St. Louis College of Physicians and Surgeons, 1901; aged 80; died, June 16.

Wilbur Jay Sawyer, Cleveland; Cleveland-Pulte Medical College, 1913; aged 53; for many years on the staff of the Lutheran Hospital, where he died, July 14.

Jesse B. McKinney, Caruthersville, Mo.; Barnes Medical College, St. Louis, 1907; aged 56; died, June 23, in the Methodist Hospital, Memphis, Tenn., of heart disease.

Jefferson D. Campbell, Greeneville, Tenn.; University of Louisville (Ky.) Medical Department, 1890; aged 78; died, July 10, of carcinoma of the rectum.

Milton Girard Edmonds, Mobile, Ala.; Howard University College of Medicine, Washington, D. C., 1927; aged 38; was found dead, July 1, of myocarditis.

Jesse Edward Rayne, Elizabeth, N. J.; University of Louisville (Ky.) Medical Department, 1906; aged 60; died, June 28, of coronary thrombosis.

Felix Joseph Lownik ⊕ Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1915; aged 46; died, July 11, of cerebral hemorrhage.

Forest Monroe Reid, Philadelphia; Howard University College of Medicine, Washington, D. C., 1920; aged 52; died, June 25, of coronary occlusion.

George B. Parkhill, Crosbyton, Texas; Memphis (Tenn.) Hospital Medical College, 1904; aged 62; died, June 29, of a self-inflicted bullet wound.

Norman Edwin Mighell, Pullman, Wash.; Rush Medical College, Chicago, 1884; aged 77; died, June 25, of arteriosclerosis and coronary occlusion.

Frederick Andrew Mendlein ⊕ Buffalo; University of Buffalo School of Medicine, 1897; aged 69; died, July 12, in the Deaconess Hospital.

Gerald A. Sparling, Kirksville, Mo.; American Medical College, St. Louis, 1880; aged 84; died, June 23, of bronchopneumonia.

Royal Warren Bemis, Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 72; died, July 8, of coronary occlusion.

Henry L. McGee, Milton, Tenn. (licensed in Tennessee in 1903); aged 68; died, June 20.

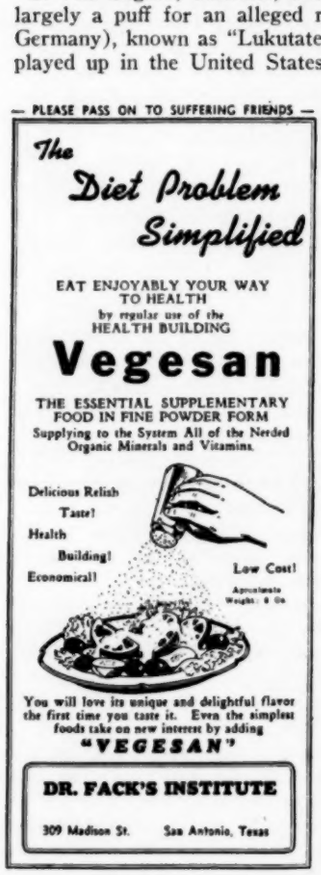
Bureau of Investigation

STUFF FROM THE SEA

Kelp Is Seaweed—Not a Cure-All

The issuance of a Post Office fraud order against a concern variously known as Dr. Fack's Institute and Dr. Fack's Health Institute, at San Antonio, Texas, and its officers and agents, brings into the limelight the chief promoter, one Hugo R. Fack, and his activities in the field of quackery.

Hugo R. Fack first came to the attention of the American Medical Association through the May 1928 issue of a health fad magazine, "How to Live for Health and Strength." This carried Fack's "Authorized Translation from the German" of an article, "The Problem of Rejuvenation Solved," attributed to "G. Von Gogern, Traveler, Lecturer, Author." The article was largely a puff for an alleged rejuvenator from the orient (via Germany), known as "Lukutate." This nostrum for a time was played up in the United States and was dealt with under that title in THE JOURNAL, Jan. 25, 1930, and again in the issue of April 23, 1932, under the subject "Dur-Inda, or Lukutate Redivivus" as the product had acquired a new name.


— PLEASE PASS ON TO SUFFERING FRIENDS —
The Diet Problem Simplified
EAT ENJOYABLY YOUR WAY TO HEALTH
by regular use of the HEALTH BUILDING
Vegesan
THE ESSENTIAL SUPPLEMENTARY FOOD IN FINE POWDER FORM
Supplying to the System All of the Needed Organic Minerals and Vitamins
Delicious Relish Taste!
Health Building!
Economical!
Low Cost!
You will love its unique and delightful flavor the first time you taste it. Even the simplest foods take on new interest by adding "VEGESAN"
DR. FACK'S INSTITUTE
309 Madison St. San Antonio, Texas

A Fack advertisement.

Next, Fack was observed advertising his booklet "The Necessity of Saving the Tonsils and Their Natural Non-Surgical Treatment." This appeared in a 1929 issue (month not given) of "McFerrin's Health Bulletin," put out by the food faddist Charles B. McFerrin, of Orlando, Fla., where Fack also held forth, operating, it was reported, an outfit first known as the "Natural Healing Institute" and later called the "Vitae Health Products Co." In the same year (1929) it was said that he moved this concern to San Antonio, Texas, and advertised the "Tonsalvator," a device for treating enlarged and diseased tonsils.

In 1933 a letter was sent out on a printed letterhead bearing the imposing title "Dr. Fack's Institute & Sanitorium —Naturopathic Clinic and Rest Home." There was also a subtitle, "Scientific Diet and Drugless Methods." Also shown were the names "Hugo R. Fack, N.D., D.Orth. Ph.D," "Emma D. Fack, N.D., D.Orth.," and "J. D. Armstrong, M.D." The American Medical Association's exhaustive files revealed no record of any J. D. Armstrong as a doctor of medicine licensed in Texas. When a form was addressed to this name in care of the Fack outfit, asking for Armstrong's medical credentials, it was returned unsigned, with the simple typewritten notation "deceased."

The Fack letter played up not only the "Tonsalvator" but also something called "Sepdelenopathy" and described as "a treatment for the elimination of toxic materials." An accompanying circular offered various nostrums by Fack, including "Fruitellax," for constipation, "Piscin—the Superior Substitute of Codliver Oil in Powderform," and "Vitae Herbs," an apparent cure-all "biologically blended after the ancient significative doctrine." (How often the faddists play up the mystical!) Finally there was "Dr. Fack's Femi-Sanax, an instrument of far-reaching therapeutic results in feminine sufferings."

In recent years Fack also has been putting out "Vegesan," described as "the essentially supplementary food in fine powder form, supplying to the system all of the needed organic materials and vitamins." Also it was claimed that "Vegesan is a pure vegetable food, which grows in certain Southern Oceanic regions. The choicest leaves of plants are selected, washed, dried in a current of air outdoors (not in withering, i. e., Vitamin destroying sun rays), then ground into fine powder form which makes complete assimilation by the human system easy and highly economical in its use while revealing its relish taste." The advertising played up a string of testimonials from so-called doctors but, as their full names and addresses were not divulged, there was no means of identifying them.

After the Post Office Department had looked into Fack's activities it called on him to show cause why a fraud order should not be issued against him. He replied with a written answer denying the charges. He also failed to appear at a second hearing of the case and did not even send a representative. Soon afterward he sent the Post Office Department a second communication and requested permission to discontinue and abandon voluntarily the enterprise in question. Accordingly he was sent a form for making affidavit of his promise but instead of duly executing and filing it he sent in a series of further communications setting forth the alleged value of his Vegesan, which he had sold through the mails.

The Post Office memorandum by virtue of which the (October 1939) mails were closed to this scheme brought out that Fack claimed that he had obtained certain medical training at Heidelberg and Leipzig, Germany, and had been licensed to practice "naturopathy" in Florida in 1927. The memorandum pointed out that Fack had sold his Vegesan through the mails under the false and fraudulent representations that, regardless of any disease or affection involved, Vegesan would restore those who took it to permanent health: that it would prevent or cure goiter, anemia, rickets, obesity, pyorrhea, constipation, "auto-intoxication," catarrh, deafness, "old age," any disease of the heart or liver, insanity, insomnia, diabetes, sterility, and a few other things!

Fack was said to have obtained the material for Vegesan in wholesale quantities from a Los Angeles concern and to have repackaged it in his home. According to the Post Office Inspector in the case Fack, when first interviewed, stated that he did not know the composition. Government chemists reported that a microscopic examination showed it to be composed entirely of dry, finely ground seaweed, or kelp. It was brought out at the hearing that, contrary to Fack's representations that Vegesan was a rich and abundant source of all organic minerals and vitamins, the only substances it contained in therapeutic quantities were iodine and vitamin A, and that any other minerals and vitamins present were too inconsiderable in amount to have any medicinal value.

The government presented expert medical evidence that Vegesan would not overcome obesity, gland disturbances, slow and defective sexual development, toxemia, insanity, tooth decay and the rest of Fack's category and that these conditions require painstaking individual diagnosis with a view to finding the underlying factors responsible for the disease and the employment of personalized procedure adapted to the patient's needs. It was further shown that while Vegesan might be mildly laxative it would not "normalize" alimentation as Fack claimed but, on the contrary, would interfere with the appetite and digestion and produce undesirable intestinal symptoms and even aggravate disorders of the gastrointestinal tract such as ulcers, appendicitis and colitis, and also involve grave and perhaps fatal consequences when substituted for scientific treatment of heart, kidney, arterial and other serious diseases.

The evidence also showed that the iodine present in Vegesan, while it might be of some value in simple goiter, could not remedy goiter of the exophthalmic or adenomatous types, overcome cretinism or provide safe or proper treatment for disorders of the thyroid gland which may have caused these conditions.

Fack apparently set himself up as an authority on diet, as he sent out advice on the use of foods in connection with Vegesan. These instructions urged the purchase of his "De-Tox-San" and "Sepdelen."

Here, then, is another of the countless "patent medicines," many of them based on kelp, which the public is importuned to buy on the ground that they supply minerals and vitamins which, according to the food faddists and nostrum exploiters, are lacking in the ordinary diet. Of course they don't do anything of the kind.

Correspondence

EVALUATION OF THE PROSTIGMINE TEST FOR EARLY PREGNANCY

To the Editor:—Soskin, Wachtel and Hechter reported in THE JOURNAL (May 25, p. 2090) on the value of prostigmine in inducing menstruation in women who had missed their regular menstrual cycle. These authors stress the role that hyperemia may play in menstruation and attempt to correlate the parasympathetic nervous system with it. They write:

> This relationship of the nervous system to uterine hyperemia might readily account for the well known influence of mental, emotional and physical strain on the menstrual history of women. It thus appeared possible that cases of delayed menstruation, now generally ascribed to temporary endocrine dysfunctions, might in fact occur despite normal hormone secretion and be due to abnormally decreased vascular responsiveness. It therefore seemed worth while to attempt to treat such cases by pharmacologic [prostigmine] rather than by endocrine means.

They showed that twenty-five women who had missed a menstrual period for from three to thirty-five days promptly menstruated after prostigmine therapy, provided, however, that they were not pregnant. They also showed by experiments on pregnant rats and on twenty-three women who had been found to be definitely in early pregnancy that this product did not interrupt gestation.

This work is a noteworthy contribution to research, but as a corollary to their investigation Soskin, Wachtel and Hechter advocate the use of prostigmine as a "therapeutic test for pregnancy." They maintain that if a woman fails to menstruate after the treatment "pregnancy may be diagnosed with the same degree of accuracy as is possible with the Friedman test." In other words, if prostigmine fails to induce menstruation in a woman who is overdue in her menses, she undoubtedly is pregnant.

The authors realized the shortcomings of such a test and qualified their statements by the following assertion:

> It must be emphasized that this procedure applies only to delayed menstruation in women who have had a normal menstrual history up to the last period. It does not apply either to early or to prolonged amenorrhea due to endocrine dysfunction or to local organic changes.

It is easy enough to state that if the patient has skipped a menstrual period because of an endocrine disturbance or pelvic abnormality the test is not applicable, but is it so simple to rule out endocrine dysfunctions and pelvic abnormalities? These qualifications are the factors which make the test practically worthless. Any physician can make a diagnosis of early pregnancy and be correct in most instances if he can be sure to exclude all endocrine dysfunctions, all local organic abnormalities, nervous oppression and anxiety, if the patient is found to be in fine health and has always menstruated regularly and on time, when she misses her last menstrual period. It is the most likely diagnosis and can be made from the history alone. It is only when the physician has any doubt from the history and physical examination of the patient that he needs the use of a pregnancy test, and the pregnancy test must have few or no exceptions. That is why the Aschheim-Zondek and Friedman tests have withstood the test of time and why the prostigmine test, with its host of interfering endocrine dysfunctions, pelvic abnormalities and the like, cannot ever hope to be as accurate as the Friedman test.

It is not my purpose in these remarks to refute the work of these investigators but merely to define more clearly the disadvantages and possible sources of error in their suggested test. A test for pregnancy which is not from 98 to 99 per cent accurate need not be contemplated when such accuracy is already in the armamentarium of the physician. Having recently made a survey of most of the so-called pregnancy tests (*Am. J. Obst. & Gynec.* **35**:354 [Feb.] 1938) and having discredited many of the tests which were at first highly praised (i. e. the female bitterling test, THE JOURNAL, April 13, 1935, p. 1318; the intradermal test, *M. Rec.* **145**:203 [March 3] 1937; the urinary histidine test, *Am. J. Obst. & Gynec.* **35**:354 [Feb.] 1938), and so on, I feel that the profession should be cautioned against any test which claims the accuracy of the Friedman test backed by so little basic or confirmatory evidence.

The following seven points are an evaluation of the prostigmine test for pregnancy:

1. The test is valueless (admitted by the authors) when the amenorrhea is due to endocrine dysfunction. But how can the examiner be certain that the case is not an endocrine dysfunction? Occasionally the diagnosis of an endocrine disturbance may be made from the history and physical examination, but this is not always possible. Therefore, to be certain that the amenorrhea is not of endocrine origin, the physician attempting the use of the prostigmine test must first test the patient with all the means at his disposal. To eliminate thyroid dysfunction, a basal metabolism test should be performed. To rule out pituitary disturbances an x-ray film of the sella turcica should be taken, a sugar tolerance test made and possibly the specific dynamic action studied. To exclude the pancreas, the urine sugar and blood sugar must be examined. To dismiss the ovaries, the physician may have to subject the patient to vaginal epithelial studies, quantitative hormone assays, biopsies of the uterine endometrium and the like. And if at the same time the patient shows some hirsutism one must rule out amenorrhea due to an adrenal adenoma, possibly by subjecting the patient to a perirenal gas insufflation with x-ray studies. It all seems so unnecessary when the Friedman test is so simple.

2. The test is worthless (admitted by the authors) when the amenorrhea is due to local organic changes. One may be able to diagnose pelvic tumors by means of a bimanual examination, but it is quite difficult to diagnose an atrophic uterine endometrium, a small corpus luteum cyst, endometriosis, oophoritis and the like without having to resort to special technics to ascertain whether or not the patient is a fit subject for the prostigmine test. Again, the examiner may have to resort to repeated endometrial biopsies, hormone determinations and even a pneumoperitoneum and hysterogram to exclude organic pathologic changes before using the prostigmine test. At times, exploratory laparotomy discloses pelvic abnormality when other means of diagnosis have failed.

3. The test can be of little value in the amenorrhea of the early menopause, since it also is an endocrine change. The menopause must therefore be ruled out by studying the cellular desquamations of the vagina and testing the p_H of the vagina at different intervals.

4. There is no physiologic reason why prostigmine should induce menstruation in a patient afflicted with a constitutional disease. The test is therefore valueless in these conditions, and x-ray examinations, blood studies and other procedures must be undertaken to rule out systemic disease in its beginning phase before the new pregnancy test is resorted to.

5. The amenorrhea from beginning anemias and blood dyscrasias offer another stumbling block to the test. Complete blood counts must be resorted to, since moderate anemia will cause the missing of a menstrual period.

6. Amenorrhea following acute infections is usually easy to differentiate from a pregnancy, but gestation may continue along simultaneously with a grip or influenza.

7. It is chiefly in cases of transient amenorrhea from nervous causes in which prostigmine has its physiologic function by inducing the delayed period to appear. In cases of shock, fright, grief, sorrow, anxiety, financial troubles, family troubles, sea voyages, changes in climate and overstudy, delay in menstruation is a frequent occurrence in some women. Prostigmine is probably a valuable adjuvant to treatment in this type of amenorrhea but ordinarily the simple expedient of rest, sedation and removal of the cause is excellent therapy in allowing the menses to reappear.

All that the physician can really tell the patient whose menses were induced by prostigmine is that she was probably suffering from some type of nervous amenorrhea. It is impossible to tell a patient that she is pregnant, using the prostigmine technic, unless the many endocrine dysfunctions, the various possible pelvic abnormalities, the menopause, anemias and beginning constitutional disorders have been definitely and wholly excluded. The simple Friedman test, employing the use of the isolated female rabbit, is 99 per cent accurate, inexpensive and rapid and with few exceptions is rarely wrong in the diagnosis of placental implantation.

A. I. WEISMAN, M.D., New York.
Department of Obstetrics and Gynecology, Metropolitan Hospital.

DIVERTICULOSIS AND DIVERTICULITIS OF THE COLON

To the Editor:—In an article entitled "Solitary Cecal Diverticulitis" (THE JOURNAL, July 20, p. 194) Dr. August Jonas Jr. reported five cases of acute diverticulitis of the cecum, in two of which the age of the patients was under 40. He also collected nineteen cases from the literature, and in seven of these, or 36.8 per cent, the age was under 40.

Dr. Jonas stated that this was "in sharp contradistinction to the age incidence of multiple diverticulitis" . . . that in a Mayo Clinic report "only 5.2 per cent occurred under 40 years of age—a proportion with which other reports are in substantial agreement." While diverticulosis and diverticulitis of the colon are considered to occur usually after the fourth decade, it is not unlikely that diverticulosis, which must precede diverticulitis, is more frequently present in the colon before the age of 40 than has been indicated in the numerous publications on this subject.

The incidence of diverticulosis by decades has been based on postmortem and x-ray examinations. Since, according to a recent report from the Bureau of Vital Statistics, there is but a yearly mortality of 0.45 per cent under the age of 40 years, the figures obtained from postmortem studies cannot be considered as conclusive in establishing the true incidence before the age of 40. Likewise, x-ray studies of the gastrointestinal tract will not show the correct incidence of diverticulosis unless it is considered in the differential diagnosis and special efforts are made to demonstrate the diverticula. Diverticula may be seen following a barium sulfate enema, but at times they are not visible unless a double contrast enema is used. It may be necessary to administer barium by mouth in order to demonstrate them, and in addition these examinations may have to be repeated, since diverticula may not be visible until as late as the fourth or fifth day after the barium sulfate meal.

Diverticulosis of the colon may be present in young persons, and diverticulitis should be considered in the differential diagnosis irrespective of the patient's age.

CARL BEARSE, M.D., Boston.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

INDUSTRIAL GOGGLES

***To the Editor:*—When industrial goggles are worn, is the degree of comfort of the wearer a satisfactory criterion of protection as far as the danger from radiant energy is concerned? Is there any danger to the eyes from visible radiation when ordinary goggles sold by retail stores are used with no technical supervision.**

M.D., Illinois.

ANSWER.—The comfort of the wearer is decidedly not an adequate criterion of the protection afforded by special purpose industrial goggles as far as radiant energy hazard is concerned. The effect of ultraviolet, for instance, is often not appreciated at once by the eye any more than by the skin. A few hours or a day later the real effect of the exposure becomes apparent. If, however, it is a question of continued comfort afforded the wearer over an appreciable time, then the comfort of the wearer would be a more adequate criterion except that it is known that certain long red rays of light produce cataract after prolonged exposure without any awareness of optical discomfort.

With respect to the second question, exact definitions are needed. What is meant by "danger to the eyes"? If it is meant that cataracts will be produced, or conjunctivitis or iritis or some other ocular disease, there appears to be practically no danger. Otherwise certainly the literature would be full of remarks on this subject, because millions of pairs of such glasses are being worn and have been worn in the United States for many years. The low priced goggles usually differ from the higher priced goggles particularly in one respect. They are full of optical flaws and consequently their effect on the eye is somewhat the same as the effect of looking through a rain swept windshield of an automobile not equipped with a good wiper. The rays of light are bent to produce irregular astigmatic effects and cause a distortion of images. This produces a feeling of "strain" and a considerable tiring of the eyes. It is conceivable, as certain authorities have proposed, that such strain may interfere with the proper nutrition of the lens. There is no certain knowledge that even this is productive of definite disease.

Some of the low priced goggles have wide opaque side shields. These interfere considerably with the normal protective mechanism of indirect sight, that is, side vision, and such goggles should not be worn eitner by automobile drivers or by pedestrians who are exposed to hazards such as crossing the streets, for obvious reasons. Probably the best of the low priced goggles on the market for most people are the polaroid.

VACCINE THERAPY FOR DERMATOPHYTOSIS

***To the Editor:*—What is the status of vaccine therapy for dermatophytosis? I am interested in this in connection with a patient who has responded to merthiolate medication but for whom it has not accomplished a lasting cure.**

Virgil F. Neumann, M.D., Norwich, Conn.

ANSWER.—Opinions regarding the efficacy of vaccines in treating eczematoid ringworm are conflicting. A few find their use of great help, while most observers feel that vaccines for this infection are a failure. Lewis and Hopper in their Introduction to Medical Mycology (Chicago, Year Book Publishers, Inc., 1939) sum up the situation:

"In recent years the use of biologic products (trichophytin) in the treatment of fungous eruption (particularly dermatophytids) has been the subject of much investigation and subsequent discussion. Early reports (such as those of Van Dyck and others) were extremely optimistic. Sulzberger and Wise expressed their enthusiastic belief that a new and useful method of curing recalcitrant lesions had been brought forward. They reported cases in which cutaneous allergy to species of Trichophyton had been relieved by desensitization. Subsequent investigation has produced sharply divided opinions, ranging from that of Traub and Tolmach, who expressed doubt that trichophytin is of any therapeutic value, to that of Robinson and Grauer, who obtained spectacular results with autogenous vaccines. Sulzberger has lately expressed his belief in the soundness of the conception of the principle of desensitization but has admitted that the clinical response to treatment is poor. Combes and some others have held that the principle of desensitization is wrong, as a reduction in the immune forces may follow reduc-

tion in the sensitivity. From our research it seems that in most of the cases of actual fungous infection an increase in sensitivity is desirable (provided that this is linked up with the acceleration of the immune forces). Thus in the infections due to T. purpureum the lack of reactions at the site of the trichophytin test after forty-eight hours is too frequent to be ignored as an explanation for the chronicity of this type of fungous disease. In dermatophytid the condition should respond when the residual focus is eliminated. In the cases in which theoretically trichophytin should be of service it is unnecessary. In general, we do not at the present time advocate its use in treating either a definite fungous disease or an allergic manifestation (dermatophytid). This statement holds true for fungous infections due to any dermatophyte and in any site, including the scalp. Considering our results, we are unable to agree that the extravagant claims for one extensively advertised (South American) brand of trichophytin are justified."

TUBERCULOUS ADENITIS AND EDEMA OF LEG AND VULVA

To the Editor:—**A Negro woman aged 44 has since September 1939 had a severe chill every three or four weeks. The chills come on without warning and usually last three or four hours. For the first hour they are mild and gradually become so severe that the patient is left in a state of collapse. Fever of 103-104 F. follows for several hours and then drops to the neighborhood of 100 F., where it may remain for several days. She generally stays in bed for a week after each chill because of generalized aching, pain in the lumbar area and pain and swelling of the left leg. Swelling of the vulva follows each chill and may remain until the next chill. When she gets out of bed she feels well except for weakness. No fever is apparent until the onset of the next bout. She has always been healthy. Three years ago she underwent a pelvic operation and the tubes and a number of small ovarian cysts were removed. She menstruates regularly and there seems to be no connection with the chills. Repeated complete physical examinations have revealed but little. The scleras and mucous membranes are pale, there is a moderate widening of the palpebral fissures, the blood pressure is 98/70, a few fine rales are heard at the left lung base, there is a healed suprapubic midline incision, and there are marked edema of the vulvae, slight tenderness and swelling of the left leg and knee, three fixed and slightly tender glands in the left axilla about the size of olives (the size has varied from time to time) and moderately enlarged left inguinal glands. A complete blood count on Feb. 2, 1940, showed hemoglobin 60 per cent (this was originally 40 per cent and was improved by the injection of a liver vitamin solution), white cells 4,500, red cells 3,230,000 (originally 2,130,000), polymorphonuclears 42 per cent, small lymphocytes 47 per cent and large lymphocytes 11 per cent. No abnormal cells were seen on repeated examination. Urinalysis was negative except for 1 plus albumin on the first examination. The agglutination test was repeatedly negative. Malarial smears were negative. Sickle cell smears were negative. A flat plate of the abdomen and a chest plate were negative. A tuberculin test with the first dilution gave a strongly positive reaction, the reacting bulla being approximately 6.5 cm. in diameter (performed recently). A biopsy of the axillary glands revealed tuberculous adenitis in the tissue section. Apparently the process is of tuberculous origin. The mechanism of the chills is vague to me and I cannot find anything in the literature that is helpful. Could the edema be allergic in nature? I should like your suggestions concerning treatment. What of roentgen treatment?**

M.D., Florida.

ANSWER.—This presents a difficult problem because the diagnosis of tuberculous adenitis seems insufficient to explain the disabling symptoms. The persistent edema of the vulva and the edema of the left leg following the acute attacks are not likely to be allergic in nature. While one hesitates to make a diagnosis of two pathologic processes in the same patient, there are certain features in this case that makes a double diagnosis tempting. There must be obstruction to the return flow from the lower extremity. This obstruction may be in the venous channels. A pelvic thrombophlebitis would produce such an obstruction, and the repeated chills and fever would be quite in keeping with such a pathologic condition. The question sets out no good reason for a pelvic thrombophlebitis. Has careful inquiry been made into the postoperative convalescence? Was there any suspicion of postoperative phlebitis? The possibility of tuberculous adenitis producing this picture is rather remote. One of the pyogenic organisms is usually the cause.

An obstruction in the lymph channels is a possibility. Tuberculosis might produce this kind of obstruction but again the chills and fever are difficult to explain. Filariasis might produce lymphatic obstruction and would explain the chills and fever, but filariasis is extremely rare in this country. Has the patient ever lived in a part of the world where infestation with Filaria is likely?

From the description one would select a pelvic thrombophlebitis as the most likely diagnosis. Roentgen treatment might be helpful but fairly good results have been obtained in recurrent thrombophlebitis with the use of sulfanilamide. It might be helpful to know whether the inguinal glands as well as the axiliary glands were tuberculous. If the inguinal glands were nontuberculous it would lend more weight to the diagnosis of a pyogenic thrombophlebitis.

CHRONICALLY INFECTED TONSILS AND BLOOD SEDIMENTATION

To the Editor:—**Would foci of infection raise the blood sedimentation rate in a midde-aged person with suspicious tonsils with no other apparent cause for raising the rate? Would that rise in sedimentation rate point to trouble in the tonsils?**

H. J. McNally, M.D., Waterloo, Ont.

ANSWER.—By accepting the term "chronically infected tonsils" instead of "suspicious tonsils," and establishing the criteria on which this diagnosis can be made, the query may be answered with some degree of confidence.

Reimann and Havens have suggested that the diagnosis of chronically infected tonsils be made when there are present (*a*) "persistent redness of the tonsils and adjacent membranes and exacerbations of acute inflammation, often with pain or discomfort on swallowing, with or without regional lymph node swelling and tenderness, (*b*) systemic signs and symptoms such as fever, leukocytosis and rapid red blood cell sedimentation, or (*c*) swelling, pain or tenderness of the lymph nodes which receive tonsillar lymph. In other words, there ought to be some clinical or other evidence of actual inflammation of the tonsils before they are regarded as infected."

This excludes the reddened tonsil, small or large, seen in most adults, otherwise healthy, and wherein the change in color is due to the vicissitudes of the years, the use of tobacco, the climatic conditions, fumes, dust, and the like.

In the acute exacerbation of the chronically infected tonsil, the sedimentation rate is often increased. The other signs of infection, however, are as accurate an aid in establishing the presence of local disease.

A rise in sedimentation rate alone and in the absence of such criteria as Reimann and Havens have established should not be used to condemn the ordinary tonsils of adult life.

Stiles and Chapman have recently made cultures from the tonsils and determined by a test of their own devising the relative pathogenicity of the organisms obtained. They have found a relationship between the virulence of the bacteria and the sedimentation rate in the same patient. It will be necessary for this test to become general and for the work to be confirmed before there can be widespread use of this method to judge the presence of disease in tonsils.

DEXTROSE IN DIABETIC ACIDOSIS AND COMA

To the Editor:—**There appears to be little unanimity of opinion regarding the use of dextrose in the treatment of diabetic acidosis and coma. Some authorities contend that dextrose in buffering a full amount of insulin develops a hotter fire to combat acidosis and both reduces the hyperglycemia and elevates the carbon dioxide tension of the blood. Other authorities contend that it is more than foolish to add dextrose to a patient already oversaturated with sugar.**

M.D., Illinois.

ANSWER.—As the questioner indicates, the problem turns on the need for dextrose in the first few hours of treatment. Some do not favor its use during the early hours of treatment when the blood sugar is high because: 1. No proof exists that injected dextrose is better utilized than dextrose already flooding the body, provided sufficient insulin is supplied; in diabetic acidosis insulin, not dextrose, is lacking. 2. In the severer stages of diabetic coma the injection of dextrose may lead to renal block (Root, H. F., and Riseman, J. E. F.: The Exceptional Requirement of Insulin and Salt Solution in Diabetic Coma, THE JOURNAL, May 21, 1938, p. 1730). Large injections of dextrose result in oliguria, according to F. M. Allen (Diabetic Experiments, *Tr. A. Am. Phys.* **53**:320, 1938) even in the treatment of hypoglycemia induced by insulin. 3. When dextrose is administered, the blood sugar ceases to be a reliable guide for treatment. 4. In certain large clinics in which dextrose is not used as a routine, the mortality rates compare favorably with those obtained elsewhere. 5. In teaching students and physicians it is safer to stress the use of large and adequate amounts of insulin than to divert attention to another feature relatively unimportant.

All will agree that during the later hours of recovery from coma, when the falling blood sugar indicates that sufficient insulin has been given to insure utilization of carbohydrate and cessation of ketone production, 100 Gm. or more of carbohydrate should be administered just as to any diabetic patient during days of routine treatment or the treatment of complications.

The primary difficulty in diabetic acidosis is the disturbance in carbohydrate metabolism due to insufficient insulin. Secondary effects are hyperglycemia, glycosuria, dehydration, acidosis, nitrogen loss, hemoconcentration and shock. The primary therapeutic problem is need for insulin.

Dextrose does not cure coma but insulin does.

ROOM TEMPERATURE AND HUMIDITY IN TUBERCULOSIS

To the Editor:—**A young man who developed tuberculosis of the lungs was exposed to some unfavorable conditions when he was employed. An engineer who examined the room reported that it was ventilated by force draft of warm air through a duct 20 by 12 inches. Air movement appeared slight and the room seemed uncomfortably warm and somewhat stuffy. The temperature was 79 F. and the humidity 32 per cent. According to the Guide, published by the American Society of Heating and Ventilating Engineers, chapter 3, modern standards for ventilation of work rooms require approximately 250 cubic feet of air space per person and a floor space of 25 square feet. These figures are conditional on control of temperature, humidity and air movement and for "still air conditions." At ordinary temperatures they represent minimal values for comfort. To what extent—I am exact—would the temperature 10 degrees above normal, workers being in close proximity with another and in contact with tuberculosis, with the floor contaminated by the use of spittoons, increase the danger from droplet infection and increased exposure to respiratory diseases?** M.D., Connecticut.

ANSWER.—A temperature of 79 F. with a humidity of 32 per cent would have no appreciable effect on the danger from droplet infection. In many houses and apartments where people reside the temperature is maintained higher than 79 F. during the winter months, and in the summer much higher temperature is not unusual. The most important factor in the development of tuberculosis in the lungs of the young man mentioned is the tubercle bacillus. It would be important to know whether he had been infected with this organism, as manifested by the tuberculin test, before he was employed and if so whether he actually had clinical disease at the time he was employed. An x-ray examination of the chest would have determined whether there were areas of disease large enough to cast shadows and, if so, laboratory and clinical examinations would have determined whether they were due to tuberculosis.

It is not clear from the question as to whether the person working in close proximity to the patient had contagious tuberculosis and whether the material in and about the spittoons contained tubercle bacilli. If the fellow worker actually had contagious tuberculosis it is possible that he transmitted tubercle bacilli to the patient, and if the patient had never previously been infected his first infection may have developed in this manner. However, the only good evidence would be obtained by applying the tuberculin test through the change from no reaction to a definite reaction while he was in contact with the other employee. Without such evidence it would be impossible to determine whether there is any direct relationship between the disease which the patient now has and the possible exposure to the other employee; that is, there is no evidence to show that the primary tuberculosis complex was not already laid down when the patient began work and that his present disease was not due to endogenous reinfection from the lesions of the old primary complex.

After infection occurs, at any time in life, endogenous reinfections may be responsible for all forms of tuberculous lesions with no further reinfection from exogenous sources. On the other hand, there is some evidence to show that exogenous reinfections can be responsible for new lesions in the body entirely independent of those produced by endogenous reinfections. Therefore it is possible that the patient was reinfected either by the respiratory or by the digestive route if he was working in close contact with a tuberculous employee. However, there is nothing described with reference to the temperature and humidity where he worked that would have any influence on first infection or reinfection with tubercle bacilli through any port of entry.

PREMENSTRUAL MASTOPATHIA

To the Editor:—**Will you please give me the recognized therapy for premenstrual mastopathia.** L. C. Howe, M.D., Muscatine, Iowa.

ANSWER.—Premenstrual mastopathia may be considered a physiologic rather than a pathologic lesion and is brought about by some disturbance in one or more endocrine glands. The most disturbing symptom is pain, which occurs characteristically from ten to fourteen days before the menses and involves both breasts and neighboring structures. It is frequently accompanied by other symptoms such as headache, palpitation of the heart, abdominal distention and nervousness. The pain usually ceases promptly with the onset of bleeding. Premenstrual mastopathia or mastalgia frequently occurs in women who have menstrual disturbances or pelvic inflammatory disease.

Unfortunately there is no uniformly successful treatment. A proper brassière for supporting the breasts is often helpful. At the present time glandular therapy is being used in an attempt to relieve painful breasts. Estrogens have helped some women. Likewise, progesterone administered intramuscularly in 1 or 2 rabbit unit doses every day or every second day of the second half of the menstrual cycle has been claimed to have helped others. Recently good results have been reported with testosterone propionate. This substance is known to produce varying degrees of involution of the breasts. To obtain relief from breast pains, 25 mg. of testosterone propionate may be given six times during the last fourteen days of the menstrual cycle. This therapy is experimental.

Since nearly every type of endocrine therapy for premenstrual mastalgia is of only temporary benefit, the administration of these endocrine products will have to be continued every month. Occasionally there is a spontaneous absence of pain for one or more months. If, however, there is no response to endocrine therapy or the expense and inconvenience of the treatment are too great and the patient is near the menopause, a premature menopause may be induced by operation or radiation therapy provided the pain is really distressing. Precautions must always be observed in the use of active hormones.

NEPHRITIS OR NEPHROSIS IN SYPHILITIC PATIENT

To the Editor:—**A woman, white, 17 and unmarried, came to me for treatment of an acute coryza. She complained in addition of what apparently was a "canker sore" of the mouth. Since I have been administering antisyphilitic treatment since December 1939 to her fiancé I took a Wassermann test, which was negative. In one week a rash appeared on both arms, the legs and the chest resembling secondary maculopapules. A repeated Wassermann test was returned positive. There was no fever, the urine was normal at the first visit and the blood pressure was 124/70. Some swelling of the ankles was present although not severe and not a subjective complaint. At weekly intervals she has received 0.3 Gm. of neoarsphenamine and 0.6 Gm. of the same drug. She now has developed generalized anasarca, the blood pressure is 178/100, the urine is that of acute nephritis and although a dietary regimen and daily doses of magnesium sulfate 2 drachms (8 Gm.) have been instituted, there is no improvement other than a fading of the rash. Will you please give me an opinion as to the cause of the acute nephritis and the treatment advised? Are the heavy metals or continuance of arsenic contraindicated? The blood urea nitrogen is 15 mg. The patient still has no subjective complaints.** M.D., Pennsylvania.

ANSWER.—It appears that the patient in question has developed severe renal involvement after the second dose of neoarsphenamine given for secondary syphilis. The relationship of syphilis and antisyphilitic treatment to nephritis or nephrosis has recently been discussed by J. H. Stokes (Modern Clinical Syphilology, ed. 2, Philadelphia, W. B. Saunders Company, 1934, p. 689), by J. E. Moore (The Modern Treatment of Syphilis, Springfield, Ill., C. C. Thomas, 1933, pp. 211-213) and by B. M. Baker Jr. (*Bull. Johns Hopkins Hosp.* **65**:196 [Aug.] 1939).

It is almost certain that the renal lesion in this case was not caused by the neoarsphenamine. It may be either an acute syphilitic nephrosis or an acute glomerular nephritis unrelated to syphilis, though inadequate information is provided to differentiate between these two conditions. In the comparatively rare nephrosis of early syphilis there is usually massive albuminuria without cylindruria or with relatively few casts (which may be double refractile/lipoid casts), low plasma protein, inversion of the blood albumin/globulin ratio, edema, usually normal blood pressure rather than hypertension, and normal or only slightly disturbed evidence of renal function. A relatively small number of red cells may be present in the urine but usually much fewer in number than in acute glomerular nephritis.

It is suggested by A. R. Rich (*Bull. Johns Hopkins Hosp.* **50**:357 [June] 1932) that acute hemorrhagic nephritis occurring during the course of secondary syphilis may possibly be explained on the basis that syphilitic lesions of the nasopharyngeal mucosa serve as ports of entry for the bacteria commonly known to cause acute hemorrhagic nephritis.

While a differential diagnosis between acute syphilitic nephrosis and nonsyphilitic acute glomerular nephritis cannot be made on the basis of the information given, nevertheless the treatment procedure is virtually identical. The patient should be placed at complete bed rest in a hospital under the usual medical regimen for the treatment of acute hemorrhagic nephritis, including limitation of fluids, diet and a search for and elimination of possible streptococcic foci of infection. Since the patient has early syphilis, antisyphilitic treatment should be continued for the sake of the renal lesion, if it is due to syphilis, for the prevention of even graver relapse in the nervous system, and for protection of the public health.

The trivalent arsphenamines or mapharsen do not produce renal damage of this nature in previously normal kidneys. Nevertheless they should not be given in maximum dosage to patients with renal involvement of this extent. They may, however, be given safely in small doses and at comparatively frequent intervals. For example, the patient may receive neoarsphenamine, beginning with a dose of 0.1 Gm., increasing for the second dose to 0.2 Gm. and for the third and succeeding

doses to 0.3 Gm. each, injections being given every second to third day. Mapharsen may be given in an initial dose of 10 mg., increasing to 20 mg. and for the third and succeeding doses to 30 mg., the injections being given daily. The shorter intervals between doses of mapharsen are permissible because the drug is rapidly excreted as compared with neoarsphenamine.

This therapeutic regimen should provide a prompt differential diagnosis between acute syphilitic nephritis and acute glomerular nephritis due to bacterial infection. If the renal lesion is syphilitic there should be prompt and spectacular improvement within a period of two to three weeks.

The administration of preparations of the heavy metals, either bismuth or mercury, should be avoided until the correct diagnosis is clear. If the lesion is syphilitic nephrosis these drugs should not be employed until all evidences of renal damage have disappeared, i. e. from two to three months hence. If, on the other hand, the lesion is acute hemorrhagic nephritis, the time at which heavy metals may be given depends largely on the patient's progress and the possibility that the acute lesion may be transformed into a subacute or chronic form of nephritis.

ABDOMINAL DISCOMFORT IN CHILD

To the Editor:—**A boy aged 10 years has been bothered with his stomach for several years. The family at first noticed that he had from one to four stools daily. He complained of general abdominal discomfort, tenderness about the navel and appendix region (appendix removed) and along the left side. Stools appear normal, except for being soft. No mucus or blood was noticed. Hemoglobin has been as low as 65 per cent; the red and white counts are normal; the urine is normal; the chest is normal; there is abdominal tenderness in the cecum, the sigmoid and about the navel. X-ray examination of the stomach shows a hyperactive intestinal tract. In fact, four hours from administration, barium sulfate was all over the rectal region of the bowel. The child is of a nervous make-up. Stools have been checked and are found negative for amebic dysentery. Will you please advise me as to what other pathologic disturbance will cause hyperactive action of the bowel?**

Kenneth A. Ohme, M.D., Mitchell, Neb.

ANSWER.—The symptoms of this child as revealed from the history, consisting of a nervous make-up, abdominal discomfort and normal stools, are probably on a neurogenic basis. Organic malformation of the bowel, as Meckel's diverticulum, may cause similar symptoms, though presumably at the time the appendectomy was performed the surgeon explored the intestinal tract for such an anomalous condition. Intestinal parasites, such as roundworm infestation, may cause similar symptoms. Likewise tuberculous ulcers of the intestinal tract may cause such symptoms and it would be wise to rule out tuberculosis by suitable tests. Dietary indiscretions or intolerance to certain constituents of the diet, such as fats or carbohydrates, may produce such symptoms. Finally, allergy to specific food substances may occasionally cause such symptoms.

DERMATITIS FROM HOP PLANT AND DESENSITIZATION

To the Editor:—**I am interested in the treatment of contact dermatitis due to the hop plant. Because of the numerous persons in this vicinity affected during the hop season, I would appreciate some suggestions as to a treatment outline or references.** **M.D., California.**

ANSWER.—The dermatitis caused by the hop plant is probably due to the lipoids or resins found in the plant leaf. These substances are soluble in lipoid solvents, as ether, and are the cause of the cutaneous lesions produced by plants.

The best treatment for the dermatitis is the use of protectives for exposed areas, as gum mastic, ethyl cellulose or gloves. If such means of protection are not possible or prove inadequate, hyposensitization may be attempted. Contact dermatitis due to plants is the only type for which there is some hope of relief through hyposensitization. Even here the results of present methods of treatment of the well known and relatively common clinical entities are in dispute. Varying results have been reported in the attempt at hyposensitization for poison ivy and pollen dermatitis. The method commonly used for the preparation of the antigen is ether extraction of the material. The material may then be dissolved to make a 2 per cent solution in an oil, as almond oil, for intramuscular injection. The initial dose usually used is 0.05 cc. of this 2 per cent solution, although it may be advisable, in the absence of knowledge of the potency of the antigen, to start with a lower dose by diluting the original 2 per cent solution with the oil solvent to a 1 : 10 or even 1 : 100 strength. The dose may be increased to as high as 1 cc. of the 2 per cent solution by intramuscular injection.

If facilities for the preparation of the material are not available, the plant may be sent to any of the well known pharmaceutic houses for the preparation of the antigen.

ENLARGED SUPRACLAVICULAR LYMPH NODES

To the Editor:—**In February 1939 a woman aged about 62 came to me with supraclavicular and cervical glands enlarged on both sides. The right supraclavicular space was filled with these enlarged glands and the left side not quite so much enlarged. She is a widow (third time), has three boys and two girls, men and women grown, and has had no miscarriages (one son and two daughters are married and have children). She has earned a living for herself and the children for the past twenty-five years, until the children were able to take care of themselves. She has worked to care for herself since then. Her general health has been good. In the twenty-five years she has not had to see a doctor more than half dozen times and then not for anything that would put her to bed. Her blood test showed red cells 4,088,000, white cells 5,900, hemoglobin 96 per cent, nonfilaments 25 per cent, filaments 45 per cent, lymphocytes 26 per cent, monocytes 3 per cent and eosinophils 1 per cent. At the time I wanted to take out one of the glands for a biopsy but she felt that she must get back to her work. She returned today saying that the glandular enlargement went down following her visit and remained down till six weeks ago. Now it is showing more enlargement than before and on the left posterior cervical space there is a large gland about 2 by 1¼ inches in size like an egg split lengthwise, with smaller ones filling the supraclavicular and cervical spaces. She says that when she was with her son in Manila some five or six years ago she had a similar condition, which left her after a few weeks. She is worried now because this time the glands have persisted longer than at any other time. They are not sore or painful. She is well nourished, large chested, a strong type of woman, about 5 feet 6 or 7 inches tall (170 cm.) and weighs around 170 pounds (77 Kg.). Her Wassermann reaction is negative. Can you give me any indication as to what might cause this trouble in her? I had thought of Hodgkin's disease but when the enlargement disappeared I began to feel that my suspicions were wrong.**

M.D., Minnesota.

ANSWER.—It is often extremely difficult to make a differential diagnosis of adenopathy and it seems subversive of the best interest of the patient to attempt to do so without biopsy when this procedure will promptly supply the answer. From the description one can only say that leukemia seems to be ruled out by the blood count, and syphilis seems to be excluded by the negative Wassermann reaction. Hodgkin's disease and lymphosarcoma loom large as possibilities, as do tuberculosis and other less common conditions. Biopsy should be insisted on at once and examination of the tissue by a competent pathologist will be almost certain to furnish the diagnosis. In those rare instances in which the pathologist is puzzled, clinical differentiation is clearly hopeless.

ACNE IN PRIMITIVE RACES

To the Editor:—**Can you give me information concerning the incidence of acne vulgaris in Eskimos or among the primitive peoples of Africa, Australia and similar regions? Is there any correlation between the occurrence of acne vulgaris and dental caries?** **M.D., Pennsylvania.**

ANSWER.—Acne vulgaris among Eskimos, native black Africans, Australian aborigines and Maoris appears to be a much less common disorder than it is among civilized white people. As the Maoris adopt modern methods of living, the condition occurs more frequently. In Ellesmere Island, Somerset Island and Baffin Land one would expect to find a great deal of seborrhea and acne, because the people subsist on a highly fatty diet. They eat practically all their food in the raw state, and no sledge dog could gobble up strips of seal meat faster than a hungry young Eskimo.

Acne as encountered in private practice and in the clinics of the Middle West is practically nonexistent among native Africans. The Kikuyu apparently suffers more frequently than the members of the white tribes who live outdoors and subsist on a simple diet. While dental caries and focal infections of the teeth probably aggravate acne vulgaris, it is doubtful whether disorders of this type ever cause it, *sui generis*.

SCARS OF CORNEA

To the Editor:—**Is there anything new, or old for that matter, to remove scar tissue? This is a case of supposedly too strong silver nitrate solution in the eyes of an infant, or it might have been infectious. So far as I know we shall never know. Now there is complete white membrane over the cornea. Theoretically potassium iodide should dissolve scar tissue.**

C. B. Kenton, M.D., Artesian, S. D.

ANSWER.—Dense scars of the cornea cannot be dissolved or thinned by any chemical means. Innumerable methods have been reported by many authors with varying degrees of success, but interestingly enough other clinicians were not able to corroborate the results. If the opacity is superficial and thin, peeling of the superficial layers of the cornea is frequently successful in restoring partial transparency. But if the opacity is throughout the thickness of the cornea, total transplantation of corneal tissue offers the only hope. And that can be successful only if the corneal tissue adjacent to the graft is fairly transparent and viable.

SERORESISTANT SYPHILIS IN CHILD

To the Editor:—In the latter part of 1934 I discovered active syphilis in a young girl employed as a maid in the household of a close friend. As one of the children in this house had been ill for some months previously, I investigated the entire family and found that this particular child had a positive Wassermann reaction. Both parents and a younger brother were and have had negative reactions on repeated examinations. The child with the positive reaction of the blood was only 7 years of age at the time and I immediately instituted a rigorous course of intravenous arsenicals alternating with preparations of bismuth. These treatments have now been in force for six years, with little let-up. The spinal fluid gives a negative reaction; the child shows no external evidence of this condition, yet Wassermann reactions of the blood are persistent by four plus. What are the possibilities, after this extensive treatment and after this length of time, of securing a negative Wassermann reaction? What should one do in this case? Should there be a let-up in treatment or should one continue treating as in an early case? What is the outlook for this child as far as a so-called cure is concerned? M.D., New York.

ANSWER.—The situation described by the inquirer of seroresistance in a syphilitic child with apparently latent syphilis who has been treated presumably continuously for six years does not differ in the least from the management of seroresistance in the adult. This situation is discussed in detail in an article by Moore and Padget (The Problem of Seroresistant Syphilis: So-Called Wassermann Fastness, THE JOURNAL, Jan. 3, 1938, p. 96).

PULPLESS TEETH AND MOUTH CANCER

To the Editor:—Is there any relationship between "dead" teeth in the mouth, root canal fillings and cancer of the mouth? M.D., North Carolina.

ANSWER.—The term "dead" tooth as commonly used refers to a tooth the pulp of which has undergone degenerative changes and is no longer vital. Root canal fillings are placed in the pulp cavity, replacing the space occupied by the dental pulp. A tooth in which the roots are filled must therefore be a pulpless or, as often loosely termed, a "dead" tooth. While there may be residual infection in the degenerative pulp tissue of a pulpless tooth or in the periapical region of a pulpless tooth with or without root canal filling, there is no well substantiated evidence to suggest any relation to cancer of the mouth.

RETINITIS PIGMENTOSA

To the Editor:—Please discuss treatment in pigmentary degeneration of the retina, with particular reference to liver and vitamin A therapy, if any. M.D., California.

ANSWER.—There have been extensive reports in the literature on this subject and as yet there is no unanimity of opinion. Consequently the necessarily abbreviated discussion that could appear in this column would be of no particular value. The reader is referred to the comprehensive article by Joseph Levine that appeared in the *Archives of Ophthalmology* (**9**:453 [March] 1933) and to the second edition of Ocular Therapeutics by S. R. Gifford (Philadelphia, Lea & Febiger, 1937, p. 324). It must be noted in passing that no one clinician nor any one clinic has the opportunity to observe a sufficiently large number of cases of retinitis pigmentosa to be able to judge adequately of the comparative value of the innumerable procedures recommended. Particular attention is called to the use of theelin (estrone) as described in the Gifford textbook. There seem to be more reports of good results from this product than from any other therapeutic procedure ever used.

RIB RESECTION IN EMPYEMA

To the Editor:—Why are acute empyemas always drained by resecting the eighth rib instead of a lower rib? Resection of the lower rib would result in more dependent drainage. M.D., Alabama.

ANSWER.—Acute empyemas are not always drained by resecting the eighth rib. By whatever method one drains the empyema, one aims at entering at its lowest part. Sometimes this is the eighth rib, sometimes the ninth, sometimes the tenth. It is obvious that the empyema must be drained where it is in contact with the chest wall. Sometimes this is in the anterior part of the thorax. In these cases it may be necessary to resect a segment of the third rib in front. An apical empyema may have to be drained by resection of the second rib high in the axilla or of the third or fourth rib between the spine and the scapula. One never operates for empyema until pus has been aspirated and obtained. One always drains the empyema at a site where pus has been obtained. When an empyema is situated in the usual location in the lower and posterior portion of the pleural cavity, one usually aspirates just over the ninth or tenth rib. It is usually well to start low and, if one does not get pus at that site, to go over the rib just higher.

It is important to emphasize the fact that there is no standard approach to empyema, because empyema may occur any place in the pleural cavity. Physical and x-ray examinations should localize it and should determine the site of aspiration, which in turn should determine the site of operation.

CULTURE MEDIUMS FOR BACTERIOLOGIC LABORATORY

To the Editor:—I wish to set up a bacteriologic laboratory for the performance of the less specialized cultural methods. I would appreciate your recommendation and outline of the preparation of suitable mediums for such procedures. I do not expect to be able to do the finer methods of isolation and identification but would like to be able to grow out with reasonable accuracy and certainty various exudate and blood stream pathogens. E. C. Chamberlain, M.D., Fort Lauderdale, Fla.

ANSWER.—Unless it is desired to do extensive work in the identification of bacteria (in which case at least one person might be constantly employed in the preparation and standardization of culture mediums) the most practical procedure would be to obtain a selection of dehydrated mediums. This is added to the proper amount of water, tubed and sterilized as needed.

The Difco Laboratories, 920 Henry Street, Detroit, carry a large assortment of such mediums. On request they send their "Difco Manual," which describes each formula and its use in the growth and isolation of bacteria.

ACID SALIVA

To the Editor:—Can you suggest a method of treatment that will alkalize an acid saliva? The saliva in this particular instance is gradually destroying the teeth. Regardless of the amount of alkali the patient takes, the saliva remains acid. Complete physical examination and routine laboratory examination are negative. M.D., California.

ANSWER.—The saliva normally is slightly acid but is never sufficiently acid to destroy the teeth when secreted. Any acid condition which would destroy the teeth is probably due to a local rapid fermentation of free sugar. A high protein diet tends to increase the acid neutralizing power of the saliva. A sugar free, high protein diet usually benefits cases of this sort as far as the teeth are concerned. If other conditions which may contraindicate this type of diet, such as inability to utilize starch or protein, are present, dental restoration is the only alternative.

INJECTION OF VAS AND VASECTOMY

To the Editor:—Is there any recognized method of sclerosing the vas deferens, for sterilization purposes, by injection of some sclerosing agent into its lumen? Is any such method in use in dealing with the feebleminded or insane? M.D., Illinois.

ANSWER.—No references have been found to any substance being injected into the vas deferens for purposes of sterilization. This procedure would be making a hard job out of an easy one. Sterilization, by removing a section of the vas deferens and overlapping the cut ends and ligating them, is so simple and so sure that there is no necessity for looking for other methods.

"PHYSICIAN, HEAL THYSELF!"

To the Editor:—Will you kindly tell me, if you can, the correct wording and the derivation of the expression "Physician, heal thyself"? I have heard it on numerous occasions but do not know whether or not I have heard it correctly nor do I know whence it came. M.D., California.

ANSWER.—The phrase "Physician, heal thyself" appears in the Gospel of St. Luke, chapter 4, verse 23, which says "And he said unto them, Ye will surely say unto me this proverb, Physician, heal thyself: whatsoever we have heard done in Capernaum, do also here in thy country."

Incidentally, verse 24, which follows, says "And he said, Verily I say unto you, No prophet is accepted in his own country."

MERCURY BICHLORIDE INTRAVENOUSLY FOR SYPHILIS

To the Editor:—Please tell me if the following method is useful in the treatment of syphilis: mercury bichloride 1: 1,000 intravenously, starting in doses of 1 cc. and gradually increasing the dose of 8 cc., giving injections two or three times a week. Please advise me as to the therapeutic value of this method if you have any information. M.D., China.

ANSWER.—While this therapy was all right in a past generation, it is hardly considered up to date. It would be rather difficult to outline the treatment that should be used, in default of knowledge concerning the symptoms or stage of the disease.

Medical Examinations and Licensure

COMING EXAMINATIONS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, August 10, page 480.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 17-19. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, Sept. 3. Sec., Dr. W. W. Council, Box 561, Juneau.

ARKANSAS: *Regular.* Little Rock, Nov. 7-8. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, Nov. 7. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), San Francisco, Oct. 2. *Written examination.* Sacramento, Oct. 21-24. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

COLORADO: Denver, Oct. 1-4. Applications must be on file not later than Sept. 17. Sec., Dr. Harvey W. Snyder, 831 Republic Bldg., Denver.

CONNECTICUT: *Written.* Hartford, Nov. 12-13. *Endorsement.* Hartford, Nov. 26. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* Derby, Nov. 12-13. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DISTRICT OF COLUMBIA, Washington, Nov. 11-12. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Tampa, Nov. 18-19. Sec., Dr. W. M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, Oct. 8-9. Joint-Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, Jan. 8-11. Sec., Dr. James A. Morgan, 48 Young Building, Honolulu.

IDAHO: Boise, Oct. 1. Dir., Bureau of Occupational License, Mr. H. B. Whittlesey, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 1-3. Superintendent of Registration, Mr. Lucien A. File, Springfield.

INDIANA: Indianapolis, June 17-19. Sec., Board of Medical Registration and Examination, Dr. J. W. Bowers, Citizens Trust Building, Fort Wayne.

KANSAS: Topeka, Dec. 10-11. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Dec. 3-5. Sec., State Board of Health, Dr. A. T. McCormack, 620 Third St., Louisville.

MAINE: Portland, Nov. 12-13. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, Dec. 10-13. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 12-14. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN: Lansing, Oct. 9-11. Sec., Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing.

MINNESOTA: Minneapolis, Oct. 15-17. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.

MISSISSIPPI: *Reciprocity.* Jackson, December. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: *Reciprocity.* Helena, Sept. 30. *Written.* Helena, Oct. 1-2. Sec., Dr. S. A. Cooney, 216 Power Block, Helena.

NEW JERSEY: Trenton, Oct. 15-16. Sec., Dr. Earl S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 7-8. Sec., Dr. Le Grand Ward, 135 Sena Plaza, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 23-26. Chief, Bureau of Professional Examinations, Mr. Herbert J. Hamilton, 315 Education Building, Albany.

NORTH CAROLINA: *Reciprocity.* Durham, Dec. 3. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OKLAHOMA: Oklahoma City, Dec. 11. Sec., Dr. James D. Osborn Jr., Frederick.

PUERTO RICO: San Juan, Sept. 3. Sec., Dr. O. Costa Mandry, Box 3854, Santurce.

RHODE ISLAND: Providence, Oct. 3-4. Sec., Division of Examination, Dr. Robert M. Lord, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Pierre, Jan. 21-22. Dir., Medical Licensure, Dr. J. F. D. Cook, Pierre.

VERMONT: Burlington, Feb. 11. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, Dec. 4-6. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WEST VIRGINIA: Morgantown, Oct. 31-Nov. 2. Sec., Public Health Council, Dr. Arthur E. McClue, State Capitol, Charleston.

WISCONSIN: Madison, Jan. 14-17. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, October. Sec., Dr. M. C. Keith, Capitol Building, Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Tucson, Sept. 17. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, Sept. 16-17. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: New Haven, Oct. 12. Chairman, State Board of Healing Arts, Dr. Charles M. Bakewell, 1945 Yale Station, New Haven.

DISTRICT OF COLUMBIA: Washington, Oct. 21-22. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Gainesville, Nov. 1. Applications must be on file not later than Sept. 16. Sec., Dr. John F. Conn, John B. Stetson University, De Land.

IOWA: Des Moines, Oct. 8. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Building, Des Moines.

MINNESOTA: Minneapolis, Oct. 1-2. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: Lincoln, Oct. 1-2. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, 1009 State Capitol Bldg., Lincoln.

OREGON: Portland, Oct. 26. Sec., Mr. Charles D. Bryne, State Board of Higher Education, University of Oregon, Eugene.

SOUTH DAKOTA: *Examination.* Yankton, Dec. 6-7. *Endorsement.* Dec. 21. Sec., Dr. Gregg M. Evans, Yankton.

WISCONSIN: Madison, Sept. 21. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Alaska March Report

Dr. W. W. Council, secretary, Alaska Board of Medical Examiners, reports the written examination for medical licensure held at Juneau, March 5, 1940. The examination covered ten subjects and included 100 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Minnesota Medical School		(1935)	89
Columbia University College of Physicians and Surgeons		(1934)	90

Missouri Reciprocity Report

Dr. Harry F. Parker, secretary, State Board of Health of Missouri, reports twelve physicians licensed by reciprocity and two physicians licensed by endorsement on April 18. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1939)	Arkansas
Indiana University School of Medicine		(1923)	Indiana
University of Kansas School of Medicine		(1936), (1937)	Kansas
Johns Hopkins University School of Medicine		(1936)	Maryland
Boston University School of Medicine		(1915)	Kansas
University of Minnesota Medical School		(1937)	Minnesota
University of Nebraska College of Medicine		(1938)	Nebraska
Cornell University Medical College		(1939)	New York
University and Bellevue Hospital Medical College		(1929)	Iowa
University of Rochester School of Medicine and Dentistry		(1932)	New York
Ohio State University College of Medicine		(1935)	Ohio

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Washington University School of Medicine		(1936)	N. B. M. Ex.
Cornell University Medical College		(1936)	N. B. M. Ex.

Illinois April Report

Mr. Lucien A. File, superintendent of registration, Department of Registration and Education, reports the written examination for medical licensure (graduates of foreign schools given also a practical test) held in Chicago, April 2-4, 1940. The examination covered ten subjects and included 100 questions. An average of 75 per cent was required to pass. Fifty-eight candidates were examined, fifty-three of whom passed and five failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Chicago Medical School		(1940)	80
Loyola University School of Medicine		(1939) 80, (1940)	86*
Northwestern University Medical School		(1939) 85,* 87, (1940) 81, 82,* 85	83,*
Rush Medical College		(1937) (1938) 79,* 82,* 83,* (1939) 81,* 82, 84, 86	79,
The School of Medicine of the Division of the Biological Sciences		(1939)	79
University of Illinois College of Medicine		(1939) 83,* 83,	84*
University of Oregon Medical School		(1937)	84*
Marquette University School of Medicine		(1939)	82
University of Wisconsin Medical School		(1938)	82*
Deutsche Universität Medizinische Fakultät, Prag		(1903)	78
Medizinische Fakultät der Universität Wien		(1899) 81, (1917) (1920) 81, (1924) 77, 83, (1925) 79, 79, (1926) 76, (1928) 81, (1929) 81, (1930) 79, 80, (1931) 77, (1937) 75, (1938) 80	79,
Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin		(1918) 75, (1919) 77, (1937)	80
Ludwig-Maximilians-Universität Medizinische Fakultät, München		(1908)	77
Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau		(1924)	77
Universität Köln Medizinische Fakultät		(1925) 80, (1933)	79
Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Pecs		(1929)	75
Regia Università degli Studi di Bologna. Facoltà di Medicina e Chirurgia		(1934)	76
Regia Università di Torino Facoltà di Medicina e Chirurgia		(1936)	79
American University of Beirut School of Medicine		(1926)	82
Universität Bern Medizinische Fakultät		(1938)	81
Second Leningrad Medical Institute		(1924)	76

School	FAILED	Year Grad.	Number Failed
Chicago Medical School		(1937)	1
Leopold-Franzens-Universität Medizinische Fakultät, Innsbruck		(1921)	1

Medizinische Fakultät der Universität Wien	(1924), (1936)	2
Kaiser-Wilhelms-Universität Medizinische Fakultät, Strassburg	(1902)	1

Twenty-six physicians were successful in the practical examination for reciprocity and endorsement applicants held in Chicago, April 2-4. The following schools were represented:

School	PASSED	Year Grad.	Reciprocity with
Northwestern Univ. Med. School	(1926)*	Minnesota, (1938)	Iowa
University of Illinois College of Medicine	(1938)		Wisconsin
Indiana University School of Medicine	(1933),*	(1938)	Indiana
State University of Iowa College of Medicine	(1936, 2)*		Iowa
Johns Hopkins University School of Medicine	(1936)		Maryland
University of Maryland School of Medicine and College of Physicians and Surgeons	(1937)*		Maryland
University of Michigan Medical School	(1934),*	(1937)	Michigan
University of Minnesota Medical School	(1928)		Minnesota
National University of Arts and Sciences Medical Department	(1916)		Missouri
Washington University School of Medicine	(1924),* (1935), (1936),* (1936, 2)		Missouri
University of Nebraska College of Medicine	(1938)		Nebraska
Temple University School of Medicine	(1935)*		Penna.
University of Pittsburgh School of Medicine	(1936)		Penna.
University of Texas School of Medicine	(1923)*		Texas
University of Wisconsin Medical School	(1937)*		Wisconsin

School	PASSED	Year Grad.	Endorsement of
Yale University School of Medicine	(1937)		N. B. M. Ex.
George Washington University School of Medicine	(1938)		N. B. M. Ex.
Northwestern University Medical School	(1938)*		N.B.M.Ex.

* License has not been issued.

New Mexico Endorsement Report

Dr. Le Grand Ward, secretary, New Mexico Board of Medical Examiners, reports thirteen physicians licensed to practice medicine by endorsement on April 9, 1940. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists	(1939)		N. B. M. Ex.
University of Colorado School of Medicine	(1935)		California
Chicago Medical School	(1935)		Illinois
Keokuk Medical College, College of Physicians and Surgeons	(1908)		Iowa
Tulane University of Louisiana School of Medicine	(1938)		Louisiana
University of Michigan Homeopathic Medical School	(1915)		Michigan
Creighton University School of Medicine	(1936)		Nebraska
University of Nebraska College of Medicine	(1935)		Wyoming
Columbia Univ. College of Physicians and Surgeons	(1932)		New York
Long Island College of Medicine	(1928)		Nebraska
University of Buffalo School of Medicine	(1937)		New York
University of Tennessee College of Medicine	(1935)		Tennessee
Université de Genève Faculté de Médecine	(1935)		New York

Washington January Report

Mr. N. N. Vaughan, secretary, Department of Licenses, reports the written examination for medical licensure held at Seattle, Jan. 15-17, 1940. The examination covered seven subjects and included seventy questions. An average of 60 per cent was required to pass. Thirteen candidates were examined, all of whom passed. Ten physicians were licensed by reciprocity and three physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
College of Medical Evangelists	(1939)		74, 74
University of California Medical School	(1939)		85
Rush Medical College	(1939)		84*
Indiana University School of Medicine	(1933)	80, (1939)	89*
University of Kansas School of Medicine	(1939)		82*
St. Louis University School of Medicine	(1938)		82
Creighton University School of Medicine	(1938)		73
University of Oregon Medical School	(1937)		82*
Marquette University School of Medicine	(1939)		86†
Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg	(1909)		74
Regia Università degli Studi di Perugia. Facoltà di Medicina e Chirurgia	(1935)		77

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Tulane University of Louisiana School of Medicine	(1932)		Minnesota
Harvard Medical School	(1928)		Minnesota
Univ. of Minnesota Medical School	(1932), (1934),	(1938)	Minnesota
St. Louis University School of Medicine	(1938)		Missouri
Creighton University School of Medicine	(1934)		Nebraska, (1937) South Dakota
Cornell University Medical College	(1932)		California
University of Tennessee College of Medicine	(1938)		Tennessee

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists	(1939)		N. B. M. Ex.
George Washington University School of Medicine	(1938)		N. B. M. Ex.
Harvard Medical School	(1935)		N. B. M. Ex.

* License has not been issued.

† This applicant has completed four years' medical work and will received the M.D. degree on completion of internship. License has not been issued.

Book Notices

The Newer Nutrition in Pediatric Practice. By I. Newton Kugelmass, B.S., M.A., M.D., Attending Pediatrician, Broad Street Hospital and Heckscher Institute, New York. Cloth. Price, $10. Pp. 1,155, with 183 illustrations. Philadelphia, Montreal & London: J. B. Lippincott Company, 1940.

A number of books have been written in recent years on the newer knowledge of the experimental modern science of nutrition. This is the most extensive volume devoted exclusively to this subject as applied to practical everyday pediatrics.

The first section (183 pages) is devoted to nutritional physiology and, as stated by the author, "reveals the physical and chemical basis of the growing organism in terms of the materials of life derived from food, air and water." An understanding of these processes is necessary in the scientific application of nutrition in health and disease. Substantiated scientific procedures are substituted for traditional methods. Among the many subjects discussed are energy metabolism (metabolism standards, energy requirements), protein, carbohydrate and fat metabolism, vitamin metabolism in detail (forty pages) and mineral metabolism, digestion and absorption. This section is interesting and instructive.

The second section (216 pages) deals with nutrition in health and presents established procedure for the advancement of positive health. The author states that "few children attain the degree of physical perfection and resistance to disease which innate capacities permit because of suboptimal environmental conditions . . . the goal is no longer mere freedom from disease but new levels of well-being." Such separate topics are discussed as newborn, premature, infant and child nutrition, infant formulas (types of milks and sugars), body build, feeding behavior and anthropometric measurements. In this section normal infant and child feeding and nutrition are brought down to date.

The third section (700 pages) concerns itself with nutrition in disease. Systemic disturbances primarily affected by nutritional factors have been discussed in great detail, while regional disturbances secondarily related to diet are given more cursory consideration. The author states "we prefer to formulate the principles involved in applying specific foods in diseases as is now universally practiced with other therapeutic agents." Frequently in the text this is exemplified by calculated diets for all age groups. This section is further subdivided into units on digestive, deficiency, metabolic, allergic, infectious and regional diseases.

There is an extensive bibliography following each of the various subdivisions of the book, and the index is well detailed for ready reference. Most of the illustrations are helpful. The reviewer does not agree with some of the illustrations regarding methods of administering parenteral fluids. In most pediatric hospitals subcutaneous injections of fluids are not given in the breast region in children, intraperitoneal injection of fluid has been discarded, and the longitudinal sinus is seldom used any more for blood or any other transfusions, even in an emergency.

The book is well written and easy to read but is unnecessarily long (especially the third section) largely because of two factors: repetition and detailed diet lists. Regarding repetition, for example, diet and nutrition as elaborated in the text should not require a separate division or even a separate paragraph for otitis media, the common cold, acute rhinitis, acute pharyngitis, acute tonsillitis, acute laryngitis or measles. Generally speaking, diets could be grouped and condensed under the general heading of afebrile infectious diseases and febrile ones. There is no specificity of diet for any one of these conditions nor does diet have much influence on the outcome. During an acute illness a child will take little except liquids and soft sweet carbohydrates. As he convalesces his appetite increases and, if gastrointestinal disturbance does not persist, may have his former regular diet as soon as he shows the desire for it. Why go into so much more detail? Other instances of this type could be mentioned. Regarding superfluous detailed diet lists, there are fifty-four pages of detailed ketogenic diets at different pediatric age levels. In many

large pediatric hospitals and clinics, this type of diet at present is seldom if ever used. Other examples of too much unnecessary detail are specific individually detailed liquid and soft diets for children 2, 4, 6, 8, 10, 12 and 15 years of age, as well as complete separate diets for children of these various age groups with tuberculosis. The general principles of the type of diet for tuberculous children should be sufficient, as there certainly is no specific diet for childhood tuberculosis, as one would be led to believe from this textbook. The same type of specifically detailed diets are given for typhoid, nephrosis, nephritis, diabetes and other conditions at various ages.

The pediatrician certainly does not need these specific detailed diet lists, and the general practitioner usually has in his library volumes dealing with general dietetics containing diet lists, which could by common sense be applied to children as well if necessary.

This volume represents an overemphasis on diet in the treatment of many pediatric conditions. It emphasizes specific amounts of food and caloric requirements, whereas the sick child or even the well child will eat only what he cares to eat, calories or no calories. It might mislead the uninformed by this overemphasis to force diets on sick children to their detriment, for fear of otherwise dire results.

This would be a better and more practical volume if to the excellent first two sections on nutritional physiology and nutrition in health were added a much more condensed section on nutrition in disease, pointing out that the general idea of feeding a child with childhood tuberculosis is to give him a well rounded, high caloric diet and really admitting that, even if he eats whatever he likes within reason, he will probably recover nicely. Specific foods in pediatric diseases other than dietary deficiency diseases can be overstressed.

The Kosher Code of the Orthodox Jew: Being a Literal Translation of That Portion of the Sixteenth-Century Codification of the Babylonian Talmud Which Describes Such Deficiencies as Render Animals Unfit for Food (Hilkot Terefot, Shulhan 'Aruk); to Which is Appended a Discussion of Talmudic Anatomy in the Light of the Science of Its Day and of the Present Time. By S. I. Levin, Senior Rabbi of Minneapolis, and Edward A. Boyden, Professor of Anatomy, University of Minnesota, Minneapolis. Cloth. Price, $4.50. Pp. 243, with 5 illustrations. Minneapolis: University of Minnesota Press, 1940.

This book constitutes the first attempt to study the Jewish law regarding fit and unfit animal food from an anatomic point of view. In order to do that, the authors made a literal translation of the sixteenth century codification of the Babylonian Talmud relating to diseases which make animals unfit for eating. After this had been done, one of the authors reviewed the anatomic portions of the law and evaluated them in the light of modern anatomic knowledge. These two diversified portions of the study brought together the strange combination of authorship, namely that of a Rabbi and of a professor of anatomy. The book, with the hundreds of notations, is intended for scholars. The average medical reader, however, will find in it enlightenment on the anatomic knowledge of the Jewish sages during the postgalenic period of medicine. Boyden believes that, as a whole, talmudic medicine is nearer that of the hippocratic than of the galenic school. As to the talmudic contribution to anatomy, Boyden states that probably the greatest single contribution of the Talmudists was the gross anatomy of the surface of the lungs, worked out in some detail by the Amoraim of the third and fourth centuries. According to him, these men and their successors were the first to record the number of lobes, to establish their fundamental asymmetry and to anticipate the modern conception of lobes as outgrowths of a stem bronchus. In addition they described the mediastinal pocket of the infracardiac lobe and the visceral pleura as well as visceral and parietal layers of the pericardium. Also they noted that adhesions arise from spittle-like exudates which congeal into membranes at the site of perforations of the lung, and distinguished them from normal membranes. Regarding the digestive system, Boyden asserts that the Talmud correctly describes the parts and action of the ruminant stomach and has provided the present day term "omasum." The rectum and anal columns were likewise named, but otherwise no distinction was made between the large and the small bowel. Probably this section contains the earliest accounts of duplication of the intestines and of the cloacal vents of birds. Of special interest is the first description of the cauda equina by the physician Samuel (third century) and the later verification of the fact that paralysis of the legs follows severance of the spinal cord (Rabina, fifth century). The Talmud also supplies one of the earliest descriptions of young human embryos—in this case viewed under olive oil in the sunlight (Abba Saul and others, second century). In addition there are numerous first accounts of agenesis and duplication of various organs, together with such anomalies as atresia of the esophagus and of the bronchial tubes, hypospadias, and Meckel's diverticulum ilei.

The Content of Cells and Proteins in the Normal Cerebro-Spinal Fluid: The Diagnostic Importance of Demonstrating Small Pathological Changes in the Cells and Proteins; The Technique of the Investigation. By Axel V. Neel, M.D., Pathologist to the Psychiatric Laboratory, University of Copenhagen, Copenhagen. Paper. Price, $2.75. Pp. 141. New York & London: Oxford University Press; Copenhagen: Ejnar Munksgaard, 1939.

The author has in this small monograph given a comprehensive and detailed discussion on the subject of the content of cells and proteins in normal and pathologic spinal fluids. He states, "The examination of the cerebrospinal fluid is the most important clinical laboratory examination in neurology and psychiatry. Gradually such an examination has, indeed, come to play a considerable role in the diagnosis of doubtful diseases in internal medicine and pediatry." Between the blood and the cerebrospinal fluid there is a barrier which does not allow protein or other substances of a colloidal nature to pass, while substances of a different nature (electrolytes, dextrose, uric acid, creatinine, nonprotein nitrogen) found in the blood are able to pass into the cerebrospinal fluid, where they can be demonstrated in a quotient which, for some substances (sodium chloride and magnesium) is greater than that in which they occur in the blood. The examination of the spinal fluid for sugar and for protein is important, but from the point of view of a differential diagnosis the importance is lessened. It has also been mentioned that with a decrease of the permeable substances in the blood a corresponding decrease is found in the cerebrospinal fluid. The author's purpose for this splendid monograph is to understand the normal cerebrospinal fluid as regards its content of cells and protein. He has reviewed the English and foreign literature and has offered interpretations with regard to the technic of the various tests and the differences in the normal figures that are found in the French, German and English literature. This monograph is recommended to all physicians, particularly the neurologists and psychiatrists.

Sexual Pathology: A Study of Derangements of the Sexual Instinct. By Magnus Hirschfeld, M.D. Authorized translation by Jerome Gibbs. Originally published in 3 volumes. Cloth. Price, $2.95. Pp. 368. New York: Emerson Books, Inc., 1940.

Magnus Hirschfeld, prior to the Nazi régime in Germany, was the unquestioned leader in the diagnosis and treatment of psychologic sexual disorders. He founded the first and the greatest clinic for handling cases of fetishism, impotence, sexual crimes and domestic maladjustment. Dr. Hirschfeld allegedly examined hundreds of thousands of cases and had histories which included some of the most important personages in Germany. His writings, which were considered sound by the majority of experts in his own field, were extensive. The present volume is strangely reminiscent of Krafft-Ebing's "Psychopathia Sexualis." It deals essentially with the same subjects: perversions, strange sex conduct and interests, hypersexed individuals and cases of impotence. There is not much discussion about the cases, nor is the work tabulated in systematic form. The actual chapter structures are much like those of the earlier writers on this subject, but the chapter divisions are more modern, as they are based on the mechanism accompanying the strange behavior rather than the type of overt abnormal sex act. Hirschfeld's case histories are not as extensive or perhaps even as interesting as those of Krafft-Ebing, but the value of the book lies not in the story of the deviant but rather in Hirschfeld's experienced and detailed explanation of the mechanisms involved in the medicolegal significance of the case as it was brought out in court, when there was a court hearing, and in his numerous references to means of treating the situation. It is a less interesting book for those who are looking for sexual *curiosa* because of the fact that the approach is moderately technical, for there is a proper use of medical terminology and the style lacks

drama. Although it is not all inclusive, most of the perversions and psychosexual problems that occur in the experience of the average physician are covered here. In view of the fact that our problems in the United States do not seem to be as extensive along these lines as they are in Europe and Asia, the average physician would not have as great need for this book as perhaps does the average European psychologist, psychiatrist or private practitioner. However, any physician who has a practice presenting a number of psychosexual problems should find this book of some value. Because it was written some years ago and has just now been translated and published in this country, it is somewhat outdated.

Treatment by Manipulation. By A. G. Timbrell Fisher, M.C., M.B., Ch.B., Orthopædic Surgeon to the St. John Clinic and Institute of Physical Medicine, London. Being the third edition of "Manipulative Surgery." Cloth. Price, $3.75. Pp. 255, with 68 illustrations. New York: Paul B. Hoeber, Inc., 1939.

A valuable book on manipulative treatment, dealing with the application of carefully controlled movements of a forced and specialized nature to joints the movements of which are restricted, with resulting painful interference with function. The history of bone setting is traced into the past through the activities of such men as John Hunter, John Hilton, H. O. Thomas, Sir James Paget and Wharton Wood. The cult of osteopathy is discussed and the conclusions of the Select Committee of the House of Lords relating to a bill for registration and regulation of osteopaths are presented. This is a crushing indictment of the cult in its claims. The development of restricted joint function is discussed from a pathologic point of view, also the prevention, diagnosis and treatment of adhesions in general, in three chapters. The indications, technic and after-treatment of lesions of the lower and upper extremity as well as those of the spine and sacro-iliac joint are dealt with at length. The book concludes with a chapter on the contraindications of manipulation. This interesting treatise on manipulation should prove to be of great interest to the orthopedic surgeon and to all others engaged in treating dysfunction of joints of traumatic or other origin.

The Rise of Embryology. By Arthur William Meyer. Cloth. Price, $6. Pp. 367, with 97 illustrations. Stanford University, California: Stanford University Press; London: Oxford University Press, 1939.

The chief aim of the author has been to give the history of the basic ideas in embryology. He begins with the ideas on reproduction held by primitive people, who associated fertility and conception with the sun, the moon and the stars. Even at present, among some Hindus, a childless woman stands naked, after bathing, facing the sun and invokes his aid to remove her barrenness. The remote ancestors of civilized people probably held opinions about reproduction similar to those current among primitive peoples of today. The story lacks chronological continuity, because some of the records are missing. The author does not pretend to write a history but selects and restricts his material. As would be expected, the chapter on spontaneous generation ends with reference to Pasteur's experiments, which about 1861 completely explained phenomena that had baffled investigators for centuries. In the chapter on the search for the mammalian ovum the quotation from Galen suggests that Herophilus, about 280 B. C., was the first to describe the mammalian ovary. Credit is given to von Baer for discovering the mammalian ovum, but much is said about William Cruikshank, who was a neglected but deserving seeker for the ovum. Cruikshank's experiments were read before the Royal Society by Sir Everard Home, brother-in-law of John Hunter, in 1797. His observations were so accurate and his experiments so well planned that one marvels how he missed discovering the ovum, or why it was thirty years after his paper was published and forty-nine years after his experiments were performed that von Baer accidentally recognized it. Other seekers of the ovum were Prevost and Dumas, who correctly surmised that the graafian follicles had once contained the "little ovules of the horns." Chapters follow on the discovery, origin and meaning of the spermatozoa, impregnation, the problem of malformation, the growth of morphology, and on early experimental embryology. There are sixty pages of reproduced illustrations, a bibliography in the back of the book, and an index.

Compendium of Regional Diagnosis in Lesions of the Brain and Spinal Cord: A Concise Introduction to the Principles of Localization of Diseases and Injuries of the Nervous System. By Robert Bing, Professor of Neurology, University of Basel, Switzerland. Translated and edited by Webb Haymaker, Assistant Clinical Professor of Neurology and Lecturer in Neuro-Anatomy, University of California, San Francisco. Eleventh edition. Cloth. Price, $5. Pp. 292, with 132 illustrations. St. Louis: C. V. Mosby Company, 1940.

The translation of this compendium into English will make the monograph popular because of its tremendous teaching value to the medical student. It is clearly and concisely written and its pages are full of practical points on cerebrospinal localization. The compendium has been increased from 200 to 275 pages with many new and more accurate ideas of localization which have been worked out in the past several years. There are two parts to the monograph: localization of spinal cord lesions and localization of cerebral lesions. In the first part there is a discussion of spinal cord lesions both in the transverse and in the longitudinal plane. This is an excellent departure from the usual book, which attempts to teach memorization of symptoms of disease entities instead of teaching certain fundamental signs and symptoms and then interpretation. In the second part are discussed lesions in the brain stem, cerebellum, cerebrum, basal ganglions and hypophysis. Many of the illustrations are colored.

Fisiopatología del hepato-colédoco: Colangiografía operatoria. Por Pablo L. Mirizzi, profesor titular de clínica quirúrgica de la Facultad de medicina de Córdoba. Cloth. Pp. 282, with 190 illustrations. Buenos Aires: Librería y editorial "El Ateneo," 1939.

The author has evidently made extensive use of cholangiography. Those not familiar with this subject will be enlightened to learn that it is now possible to study the biliary system by the injection of opaque oil into fistulas or at operation by injecting the gallbladder or the biliary ducts. Immediate x-ray films are highly instructive. The opening chapters deal with the anatomic and physiologic considerations, illustrated by numerous roentgenograms of the opacified hepatic and common ducts. The rest of the book is devoted to the employment of biliary tract visualization at the time of the operative act. Due credit is given to American, French and German authors who have done much to develop and popularize the method. Numerous illustrations, most of them clear and interesting, illuminate the text. The book is a veritable atlas of interesting cases. Operative cholangiography has been of great use. The accurate interpretation of the shadows is in general easy, but valuable experience with the systematic examination of hundreds of cases aids greatly in protection against errors. Among the causes of error in interpretation may be mentioned defects of surgical technic causing wounds of the biliary passages, the injection of the contrast substances outside the biliary tract, or the accidental ligation of one or more of the bile ducts. The contrast medium may be injected under low pressure and in excessive quantity. Air may be injected and cause error.

Unto the Fourth Generation: Gonorrhea and Syphilis. What the Layman Should Know. By Irving Simons, B.S., M.D. Cloth. Price, $2.50. Pp. 243, with 18 illustrations by M. Emanuel, M.D. New York: E. P. Dutton & Co., Inc., 1940.

This book fails in its avowed purpose of being written for the layman alone and not for the physician. A large share of the material in it is of interest only to the physician. The presentation of controversial matters in the field of venereal diseases will do little but add to the confusion of the reader and may tend to increase the phobias that he may already possess, or it may well introduce new ones. There is little that the reader will benefit from statements in the book such as "On examining the patient there will be noted a large liver, saber tibia" or that "shot like lymph glands are found in the neck, groin or armpits." True these are symptoms of one of the venereal diseases, but there is no need for this detail on how to diagnose a disease. Many of the illustrations are excellent but unfortunately a few are decidedly out of place. One showing a woman with a little child and with the caption "One Child Sterility—A gonorrheal woman can usually give birth but once" is quite likely to be misunderstood. Not all cases of one-child sterility are due to gonorrhea and yet that is the impression that this illustration makes. Some of the statements the author makes are not clear and can easily confuse the reader. The final chapter, labeled "scientific addenda,"

contributes little toward the education of the nonmedical reader. To understand this chapter demands a sound understanding of bacteriology. The author speaks of reagin, amboceptor and antigen, which are not words in the common vocabulary of the layman. The book cannot be recommended for the lay reader.

Lehrbuch der röntgenologischen Differentialdiagnostik der Erkrankungen der Brustorgane. Von Dr. Med. habil. Werner Teschendorf, Chefarzt des Strahleninstituts der allgemeinen Orskrankenkasse Köln. Paper. Price, 69 marks. Pp. 803, with 891 illustrations. Leipzig: Georg Thieme, 1939.

This magnificent publication represents about the best of publications on roentgenology of the lungs. It is most comprehensive and abreast of the time. The text includes differential diagnosis of diseases of the lungs, diseases of the heart and the maladies of the esophagus and the diaphragm. One searches in vain for any serious oversight. The text is full and rather easy to read. Due attention is paid to roentgen kymography, which is explained at considerable length. Especial consideration is given to accurate identification of the actual sites of bronchial strictures in bronchogenic carcinoma. Laminagraphy comes in for extensive discussion. There are a number of illustrative roentgenograms which draw a convincing parallel between the laminagram and the ordinary roentgenogram in the diagnosis of certain lesions. In the discussion on the heart, kymography and electrocardiography are both associated with the ordinary roentgenogram in a highly instructive manner.

Skin Hazards in American Industry. Part III. By Louis Schwartz, Medical Director, U. S. Public Health Service. From the Division of Industrial Hygiene, National Institute of Health. Prepared by the direction of the Surgeon General. Federal Security Agency, U. S. Public Health Service. Public Health Bulletin No. 249. Paper. Price, 15 cents. Pp. 93, with 22 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1939.

Schwartz has extended his observations of skin irritants into an additional list of industries—citrus fruit; cigar; acid; pulp and paper; organic solvents; chromic acid and chromates; iron and steel; paints, varnishes and lacquers; glass; photographing, photo-engraving, lithographing, printing, typewriting, and hectographing; and explosives. The industrial operations and materials are fully described in the text. Extensive lists of potential irritants have been prepared under certain of these headings, which in the case of glass amount to nearly a hundred different substances. Multiply examples of this kind by the total number of industrial operations, and the complexity of the problem as a factor in occupational diseases can be comprehended. There are, however, methods of protection which are discussed. Each subject has its own bibliography but the individual irritants are not separately indexed. This pamphlet again demonstrates the enormous superiority of color plates as a means of demonstrating characteristic cutaneous changes.

The Pathology of Internal Diseases. By William Boyd, M.D., LL.D., M.R.C.P., Professor of Pathology and Bacteriology in the University of Toronto, Toronto. Third edition. Cloth. Price, $10. Pp. 874, with 357 illustrations. Philadelphia: Lea & Febiger, 1940.

This readable book has proved especially valuable to students for correlating their early courses in pathology with clinical medicine. The organization of the third edition is the same as that of previous editions, and the contents cover the pathology of most common diseases other than the more purely surgical conditions. Though much new material has been added, the book has been condensed rather than expanded. This has been accomplished by deletions as well as revisions and by relegating to small type material of subsidiary importance. The most extensively revised sections are those on the pathology of the heart and coronary arteries; diseases of the lungs, particularly lobar pneumonia, silicosis and bronchogenic carcinoma; and diseases of the kidney, revised with reference to the newer work in pathologic physiology. There are also considerable changes in the sections on some of the endocrine disorders, anemias and diseases of the spleen and lymph nodes. The classified bibliography has been supplemented and revised. A number of new illustrations have been substituted for the previous ones, and the addition of eighteen engravings and four color plates makes this an unusually well illustrated textbook.

Steckschuss und Röntgenstrahlen: Untersuchung und Behandlung der Steckschüsse. Von Prof. Dr. Rudolf Grashey. Boards. Price, 8.70 marks. Pp. 92, with 116 illustrations. Leipzig: Georg Thieme, 1940.

This book condenses into less than a hundred pages the description of nearly every useful method of foreign body localization which has been developed. The illustrations look familiar; many are duplicates of those used in the war of 1914-1918. Almost no difference can be discerned between the methods described in this work and those employed twenty-five years ago; neither do we find any new methods. Considerable attention is given to the Dessane Bonnett and similar devices for employing the x-rays fluoroscopically in the full light of the operating room. Description is also given of the method of utilizing the usual fluoroscopic equipment for aiding the surgeon in the extraction of projectiles. This is a timely publication from the point of view of the Germans and should serve to stimulate interest in this same subject in the United States.

L'anoxémie: Ses effets—son traitement. L'oxygénothérapie. Par Léon Binet, professeur de physiologie à la Faculté de Paris, Madeleine Bochet, assistante, et M. V. Strumza, assistant à la Faculté de médecine de Paris. Paper. Price, 60 cents. Pp. 95, with 26 illustrations. Paris: Masson & Cie, 1939.

Binet presents an excellent statement of the consequences of anoxemia as it affects the heart, the brain and the blood. Chapter three of part one contains an interesting presentation on the effect of drugs on resistance to anoxemia. The second half of the volume is concerned with the effect on the lungs and other organs of prolonged exposure to almost pure oxygen. It is well illustrated by photomicrographs of the pathologic changes in the viscera of guinea pigs thus exposed. Similar effects, though less advanced, were observed after a longer exposure to 70 per cent and even to 60 per cent oxygen. Oxygen therapy is well presented, especially the mechanical apparatus for the maintenance of artificial respiration. Several devices not commonly used in America are pictured, such as portable respirators which cover only part of the body. The small "spirophore of Woillez" for the newborn should be of interest to obstetricians and practitioners in rural districts. Apparently the deficiencies of a Bourdon tube gage for therapy have not been recognized on the continent. Unfortunately there is no index and only a poor table of contents.

Savill's System of Clinical Medicine Dealing with the Diagnosis, Prognosis, and Treatment of Disease for Students and Practitioners. Edited by Agnes Savill, M.D., and E. C. Warner, M.D., F.R.C.P. Eleventh edition. Cloth. Price, $9. Pp. 1141, with 193 illustrations. Baltimore: William Wood & Company, 1939.

As was said when the last edition appeared, any book which goes into the eleventh edition or which has to be republished nine times in twenty years must have much in it that appeals to physicians and satisfies their needs. It is the sort of textbook of medicine which the medical student likes because it is brief and the headings are prominent and easy to follow. Probably the main value of the book is for the student who wants help in gaining his first introduction to internal medicine.

Displacement of the Calcified Pineal Body in Roentgen Pictures as an Aid in Diagnosing Intracranial Tumours: An Anthropometrical-Statistical Analysis. By Bengt Lilja. Acta Radiologica, Supplementum XXXVII. Paper. Price, 10 Swedish kroner. Pp. 183, with illustrations. Stockholm: P. A. Norstedt & Söner, 1939.

This monograph proposes to determine the limits of normal variation in the position of the pineal body by the use of modern anthropological and statistical methods. By a review of the previous literature the author demonstrates the need of a more accurate method than that proposed by Vastine and Kinney and others. He used as material a series of 200 normal x-ray photographs of adult skulls from the Serafimer Hospital, all of which had been taken by the standardized technic of Lysholm. After discussing the various possibilities of error due to the technic of x-ray photography, to the method of measurement and to individual variation in the size of the skull, the author establishes the values for eleven radii with their standard deviation and mean with standard error; the directly observed measurements of the radii were calculated as percentages of the skull length and skull height for practical use. When this information obtained from normal skulls was used to interpret the measurements of the skulls of 217

patients with brain tumor from the clinic of Olivecrona, the author found a displacement greater than the normal limit of variation in 37 per cent. In the case of supratentorial tumors the pineal shadow was displaced significantly in 50 per cent of the cases, in infratentorial tumors in only 14 per cent. By supratentorial tumors the pineal body was shown to be almost always displaced backward and downward. A brief abstract is given of each of the 217 cases with the measurements of each. Finally a table of figures for different degrees of displacement is given with a statement as to the probability of any case being pathologic. This table is meant to be used in clinical work. One is impressed by the scientific accuracy of this study. It is presented clearly in excellent English and should be indispensable to every roentgenologist.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Use of Operative Surgery by Osteopath Unlawful.—Frankowsky, an osteopath, was licensed in Illinois to treat human ailments without the use of drugs or operative surgery. He was convicted of performing a surgical operation without a license authorizing him so to do in violation of the medical practice act of Illinois. On appeal the constitutionality of the medical practice act was upheld by the Supreme Court of Illinois and on that court's transference of the case to the appellate court of Illinois, first district, the judgment of conviction was affirmed. *People* v. *Frankowsky*, 368 Ill. 171, 13 N. E. (2d) 178; 296 Ill. App. 637, 15 N. E. (2d) 894; abstr. J. A. M. A. **112:**1633 (April 22) 1939. Frankowsky thereupon appealed again to the Supreme Court of Illinois.

The information or indictment charged that on March 4, 1937, Frankowsky had treated a patient's rectal fissures by hypodermic injection of procaine hydrochloride or cocaine, by cutting or clipping tissues of the rectum with a metal surgical instrument and by prescribing the use of a medicine known as "proctologic dionol." In the opinion of the Supreme Court, of the acts charged the evidence clearly showed that Frankowsky on the date in question did cut or clip tissues of the rectum. There can be no doubt, said the court, that this act was a surgical procedure. Even though he did not, on March 4, commit all of the acts charged in the information, he did on that day treat a human ailment by operative surgery which he was not licensed to do and so he was guilty of a violation of the medical practice act.

The court could not agree with Frankowsky's contention that a prima facie case of violation of the medical practice act had not been made out because the state had failed to prove that his license limited him to practice the healing art without operative surgery. In the opinion of the court, it was not necessary that the state offer such proof. In fact, the information did aver in effect that he lacked a proper license to perform a surgical operation. In a penal action for violation of a statute, said the court, when the question of due license to practice a certain profession arises, the burden of proving a proper license rests not on the state but on the defendant.

For the reasons stated, the Supreme Court affirmed the judgment of conviction.—*People v. Frankowsky (Ill.), 21 N. E. (2d) 582.*

Life Insurance: Total and Permanent Disability Construed.—The defendant company issued a life insurance policy to Gibbons whereby it promised to pay him certain benefits and waive payment of further premiums if he should "become totally and permanently disabled and will for lifetime be unable to perform any work or engage in any business for compensation or profit." In April 1933 Gibbons, who had been employed by the American Steel & Wire Company for forty-eight years and at that time was a night roll superintendent, was "seriously stricken with ulcers and suffered a severe hemorrhage." He spent several weeks in a hospital and was confined to bed at his home for months thereafter. He attempted to work again but was able neither to perform the strenuous physical work required by his prior job nor to perform even the light work required by the job of night watchman. He had hemorrhages from his duodenal ulcer or ulcers as late as September 1937. The defendant company refused to pay benefits for total and permanent disability or to waive the payment of further premiums, whereupon Gibbons instituted action in the form of two separate suits. From judgments in favor of the plaintiff, the company appealed to the Supreme Court of Ohio.

The phrase "totally and permanently disabled" within the meaning of a policy of insurance, said the Supreme Court, should be given a liberal interpretation. To be totally disabled it is not necessary that the insured be so utterly helpless as to be incapable of performing work of any kind for remuneration or profit, but it is sufficient if he is unable to perform any work or engage in any business for compensation or profit for which he was qualified. In the judgment of the court, the insured in the instant case was totally disabled from performing the work for which he was qualified. The court took cognizance of the medical testimony adduced by the defendant to the effect that Gibbons' disability was temporary in that following hemorrhages he was disabled but after such bleeding subsided he was capable of resuming work. In holding that nevertheless Gibbons' disability was permanent, the court said that a disability need not continue until death in order to be permanent. For its decision the court relied on the fact that another provision in the insurance policy in question provided that, notwithstanding proof of total and permanent disability, no benefits would be paid and no premiums would be waived if the insured, on demand by the insurer not oftener than once a year, failed to furnish proof of continuance of his disability or if he was found after a medical examination to be able to perform any work or engage in any business for compensation or profit. This provision, therefore, clearly recognized that for purposes of the policy a disability to be permanent need not necessarily be lifelong. Accordingly, the judgments in favor of the plaintiff were affirmed.—*Gibbons v. Metropolitan Life Ins. Co. (Ohio), 21 N. E. (2d) 588.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Cleveland, Oct. 6-11. Dr. William P. Wherry, 107 South 17th St., Omaha, Secretary.
American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Excelsior Springs, Mo., Sept. 26-28. Dr. James R. Bloss, 418 Eleventh St., Huntington, W. Va., Secretary.
American Association of Railway Surgeons, Chicago, Sept. 16-18. Dr. Daniel B. Moss, 547 West Jackson Blvd., Chicago, Secretary.
American Congress of Physical Therapy, Cleveland, Sept. 2-6. Dr. Richard Kovacs, 2 East 88th St., New York, Secretary.
American Hospital Association, Boston, Sept. 16-20. Dr. Bert W. Caldwell, 18 East Division St., Chicago, Executive Secretary.
American Public Health Association, Detroit, Oct. 8-11. Dr. Reginald M. Atwater, 50 West 50th St., New York, Executive Secretary.
American Roentgen Ray Society, Boston, Sept. 26-Oct. 4. Dr. Carleton B. Peirce, Royal Victoria Hospital, Montreal, Canada, Secretary.
American Society of Anesthetists, New York, Oct. 10. Dr. Paul M. Wood, 745 Fifth Avenue, New York, Secretary.
Association of Military Surgeons of the United States, Cleveland, Oct. 10-12. Dr. H. L. Gilchrist, Army Medical Museum, Washington, D. C., Secretary.
Colorado State Medical Society, Glenwood Springs, Sept. 11-14. Mr. Harvey T. Sethman, 537 Republic Bldg., Denver, Executive Secretary.
Delaware, Medical Society of, Rehoboth Beach, Sept. 9-11. Dr. C. L. Munson, 1015 Washington St., Wilmington, Secretary.
Idaho State Medical Association, Sun Valley, Sept. 11-14. Dr. J. N. Davis, 204 Fourth Ave., East, Twin Falls, Secretary.
Kentucky State Medical Association, Lexington, Sept. 16-19. Dr. A. T. McCormack, 620 South Third St., Louisville, Secretary.
Michigan State Medical Society, Detroit, Sept. 24-27. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing, Secretary.
Mississippi Valley Medical Society, Rock Island, Ill., Sept. 25-27. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.
Nevada State Medical Association, Las Vegas, Oct. 11-12. Dr. Horace J. Brown, 120 North Virginia St., Reno, Secretary.
Oregon State Medical Society, Eugene, Sept. 4-7. Dr. Morris L. Bridgeman, 1020 S.W. Taylor St., Portland, Secretary.
Pacific Association of Railway Surgeons, Reno, Nev., Sept. 20-21. Dr. W. T. Cummins, 1400 Fell St., San Francisco, Secretary.
Pennsylvania, Medical Society of the State of, Philadelphia, Sept. 30-Oct. 3. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh, Secretary.
Utah State Medical Association, Ogden, Aug. 29-31. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.
Washington State Medical Association, Tacoma, Aug. 26-28. Dr. V. W. Spickard, 1305 Fourth Ave., Seattle, Secretary.
Wisconsin, State Medical Society of, Milwaukee, Sept. 18-20. Mr. J. G. Crownhart, 110 East Main St., Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1930 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

19:639-780 (June) 1940

*Modifying Action of Certain Drugs (Aminophylline, Nitrites, Digitalis) on Effects of Induced Anoxemia in Patients with Coronary Insufficiency: Remarks on Therapy. R. L. Levy, H. G. Bruenn and N. E. Williams, New York.—p. 639.

*Arteriosclerosis of Coronary Arteries and Mechanism of Their Occlusion. H. Horn and L. E. Finkelstein, New York.—p. 655.

Electrocardiogram During Attacks of Angina Pectoris: Its Characteristics and Diagnostic Significance. J. E. F. Riseman, J. V. Waller and M. G. Brown, Boston.—p. 683.

Study of Hypothetic Anoxemic Factor in Experimental and Clinical Hypertension. A. Steiner, D. M. Weeks and A. L. Barach, New York.—p. 708.

Variations in Normal Precordial Electrocardiograms: Report of Observations on 100 Normal Subjects. R. L. Shanno, Forty Fort, Pa.—p. 713.

Studies on Coronary Occlusion: I. Effects on Electrocardiogram of Cat of Producing Anoxemia After Coronary Artery Ligation. W. S. Scott Jr., A. Leslie and M. G. Mulinos, New York.—p. 719.

Basal Metabolic Rate in Organic Heart Disease. H. J. Stewart and N. B. Jack, New York.—p. 738.

Action of Certain Drugs on Induced Anoxemia.—Levy and his co-workers studied the effect of various drugs on the occurrence of pain and on the form of the electrocardiograms of ten patients with coronary sclerosis. The technic used was that for inducing oxygen want by enabling the patient to breathe a mixture containing a constant percentage of oxygen at a rate comparable to normal pulmonary ventilation. The data of eighty-six tests and 739 electrocardiograms were pooled, averaged and compared with controls. 1. Aminophylline in doses of 0.48 Gm. intravenously prolonged the appearance of pain in 63 per cent and diminished the RST deviation by 58 per cent. The T waves were modified in seven of the ten patients. 2. Glyceryl trinitrate caused a prolongation of 51 per cent in the time of appearance of pain and diminished the RST deviation by 47 per cent. The T waves of six patients were modified. 3. Aminophylline prolonged the appearance of pain in 26 per cent, diminished the RST deviation by 32 per cent and modified the T waves of four patients. 4. Lactose caused only a 2 per cent prolongation in the time of appearance of pain, and the change in RST deviation was 13 per cent. The T waves of four patients were modified. 5. Erythrol tetranitrate prolonged the appearance of pain of 2 per cent, diminished the RST deviation by 26 per cent and modified the T waves of four patients. 6. Digitalis shortened the time of appearance of pain by 9 per cent, diminished the RST deviation by 40 per cent and modified the T waves of seven patients. There were no constant relationships between changes in heart rate, blood pressure, the occurrence of anginal pain and changes in the form of the electrocardiogram. It appears that when aminophylline is taken orally it exerts a beneficial action in certain cases of cardiac pain by causing dilatation of the coronary vessels. The result probably depends on the anatomic condition and physiologic state of the coronary circulation. Criteria for the selection of suitable cases are not yet at hand. Glyceryl trinitrate dilates the coronary arteries of patients with coronary sclerosis and for this reason is effective in relieving anginal pain and not because it lowers systemic blood pressure. Erythrol tetranitrate is not effective in raising materially the threshold for cardiac pain. The increase in the tendency to pain of digitalis does not appear to be due to coronary constriction.

Arteriosclerosis of Coronary Arteries and Their Occlusion.—Horn and Finkelstein studied 100 hearts which at necropsy showed evidence of recent occlusion of the coronary arteries either by thrombosis or by massive hemorrhage into their walls or both. The main branches of the coronary arterial tree exhibited advanced sclerotic changes with approximately equal frequency, although the incidence in the anterior descending branch of the left coronary artery was perhaps slightly higher than elsewhere. Arteriosclerotic changes were infrequent in the intermuscular branches of the coronary arteries. Vascularization of the intima was found only in the presence of arteriosclerosis. Intramural hemorrhage was frequent and was always associated with vascularization and plaque degeneration. It invariably originated within the wall rather than by imbibition from the lumen. Coronary artery occlusion was produced by intramural hemorrhage in 62.5 per cent and by the formation of a thrombus on an arteriosclerotic plaque in 37.5 per cent. Intramural hemorrhage led to coronary artery occlusion by inducing acute degenerative and reactive responses in the plaque overlying the hemorrhage, by obstructing the artery mechanically or by dissolution and rupture of the intimal layer. The change is dependent on the vascularity of the plaque and the degree of its degeneration. Occlusion of a coronary artery produced by the deposition of a thrombus on a plaque was usually secondary to an edematous, acute, reactive or degenerative change in the subendothelial tissue. The coexistence of recent and organizing changes within a plaque or its thrombus supports the belief that coronary artery occlusion may be a slow, progressive process. The right coronary artery was the most frequent site of acute occlusion. Simultaneous multiple occlusions were common. Fibrinoid-like masses within arteriosclerotic plaques were considered to be the sequelae of intramural hemorrhages or extravasated blood plasma originating from the mural capillaries within the plaque. Calcification was frequent within degenerating plaques. The only correct pathogenic evaluation of old arterial lesions is a statement of the extent and degree of arteriosclerotic change. A prominent adventitial perivascular infiltration with lymphocytes was often encountered in arteriosclerotic vessels. Medial atrophy was frequent and appeared in direct proportion to intimal thickening. Arteriosclerosis was observed in every instance in which a partial or complete arterial occlusion was found. From the morphologic analysis, coronary artery occlusion is an incident in arteriosclerosis.

American Journal of Public Health, New York

30:589-724 (June) 1940. **Partial Index**

Some Obscure Factors in Epidemiology of Malaria. L. W. Hackett, Cairo, Egypt.—p. 589.

Measures Instituted for Control of Aedes Aegypti. J. H. LeVan, Brownsville, Texas.—p. 595.

*Epidemiology of Acute Coccidioidomycosis with Erythema Nodosum. ("San Joaquin" or "Valley Fever"). C. E. Smith, San Francisco. —p. 600.

Public Health Engineering Phases of Murine Typhus Control. R. J. Boston, Atlanta, Ga.—p. 619.

Utilizing Vital Statistics in the Public Health Program. F. P. Allen, Cincinnati.—p. 627.

Typhoid Fever Epidemic Caused by Carrier "Bootlegging" Oysters. H. N. Old and S. L. Gill, Hahnville, La.—p. 633.

Administrative Problems in Securing Proper Bactericidal Treatment of Eating and Drinking Utensils. R. D. Bushong and A. H. Fletcher, Memphis, Tenn.—p. 652.

Treatment as a Part of Services of Health Departments. G. C. Ruhland, Washington, D. C.—p. 661.

Controlling a Malaria Epidemic at Maxine, Ala. G. M. Tate, Birmingham, Ala.—p. 675.

"Ropiness" in Tea Caused by Aerobacter Aerogenes in Water Supply. R. A. Greene, Emma Judd and G. W. Marx, Tucson, Ariz.—p. 680.

Laboratory Aspects of Chancroid, Granuloma Inguinale and Lymphogranuloma Venereum. E. S. Sanderson, Augusta, Ga.—p. 683.

South Carolina Birth Registration Campaign. M. B. Woodward, Columbia, S. C.—p. 687.

Acute Coccidioidomycosis with Erythema Nodosum.—According to Smith, an investigation was made of 432 patients with San Joaquin fever, valley fever or desert rheumatism, in Kern and Tulare counties, Calif., during the seventeen months beginning December 1937. All the patients recovered without sequelae. This disease, characterized by influenza-like prodromes followed by erythema nodosum with or without erythema multiforme, was frequently confused with influenza, pneumonia, tuberculosis, measles and smallpox, and occasionally even with poliomyelitis, typhoid and syphilis. The incubation period ranged between one and three weeks. Sensitivity to coccidioidin, a product of the causative fungus, Coccidioides immitis, was established in from two to seventeen days after the onset of

symptoms. The erythema nodosum was associated with the hypersensitivity of freshly acquired allergy. This allergy, apparently like tuberculin sensitivity, was of long duration. Consequently, second attacks were rare (two in the series). Coccidioidomycosis with erythema nodosum was rarely if ever a contact infection. Apparently the disease was acquired by inhalation of the chlamydospores. The seasonal incidence corresponded to the climate and the agricultural activities, with the peak in the dusty fall and the ebb in the wet winter. The benign valley fever was most common among white females in contrast with coccidioidal granuloma, which is known to be especially prevalent among dark-skinned males. Nearly half of the patients had resided in the San Joaquin Valley less than one year, while only one ninth had been in the region ten years or more. Eventually most of the inhabitants of the region undergo an infection with Coccidioides. As erythema nodosum does not develop in more than 5 per cent of those infected, the series represented between 8,000 and 10,000 attacks of coccidioidomycosis.

American Review of Tuberculosis, New York

42:1-154 (July) 1940

Tuberculosis Mortality and Industrialization, with Special Reference to the United States: Part I. G. Wolff, Baltimore.—p. 1.
Experimental Pulmonary Tuberculosis in Dog: Primary Infections. M. A. Mills, E. E. Barth and F. D. Gunn, Chicago.—p. 28.
Experimental Tuberculosis: Observations on Tissue Reaction and Natural Resistance. W. Pagel, Cambridge, England, and London, England.—p. 58.
Elimination of Virulent Tubercle Bacilli by Normal Kidney of Guinea Pig. D. Yegian, Ray Brook, N. Y.—p. 70.
Axillary Approach for Extrapleural Pneumonolysis and Pneumothorax. M. Joannides, Chicago, and O. C. Schlack, Oak Forest, Ill.—p. 76.
Contralateral Lung After Thoracoplasty. M. Finkelstein and A. Guggenheim, Denver.—p. 82.
New Measures in Tuberculosis Campaign in Sweden. E. Hedvall, Lund, Sweden.—p. 99.
Tuberculosis in Negroes of College Age. H. M. Payne, Washington, D. C.—p. 109.
Tuberculin Survey of 1,000 Cases of Active Tuberculosis. F. A. Musacchio, Detroit.—p. 120.

Annals of Otol., Rhin. and Laryngology, St. Louis

49:289-576 (June) 1940. **Partial Index**

*Mycotic Infection of Bronchopulmonary Tract. A. J. Vadalà, Ancon, Canal Zone.—p. 291.
Usable Hearing. C. C. Bunch, St. Louis.—p. 359.
Estimation of Improvement in Hearing Following Therapy of Deafness. W. Hughson and E. G. Witting, Abington, Pa.—p. 368.
Summary of Round Window Graft Operations Performed for Deafness. W. Hughson, Abington, Pa.—p. 384
Chronic Stenosis of Larynx, with Special Consideration of Skin Grafting. F. A. Figi, Rochester, Minn.—p. 394.
Advantage of Mixed Bone and Cartilage Grafts in Correction of Saddle Nose and Other Depressed Deformities of Dorsum. L. Cohen, Baltimore.—p. 410.
Carcinoma of Larynx. L. B. Bernheimer, Chicago.—p. 418.
Results in Labyrinth Fistulization Operation for Chronic Progressive Deafness: Report of Cases. E. H. Campbell, Philadelphia.—p. 447.
Diagnosis and Treatment of Chronic Disease of Paranasal Sinuses. H. L. Williams and L. H. Mousel, Rochester, Minn.—p. 466.
Retropharyngeal Abscess, with Reference to Abnormally Large Percentage of Adult Cases. J. E. Smith, Charleston, S. C.—p. 490.
Bacteriologic Studies of Acute Infections of Middle Ear. L. D. Henry and H. A. Kuhn, Hammond, Ind.—p. 519.
*Bronchoscopy as Treatment of Postoperative Atelectasis: Report of Ninety Cases. J. A. Perrone, Pittsburgh.—p. 528.

Bronchopulmonary Mycosis.—According to Vadalà the most important locations affected by mycotic infections are the tissues of the respiratory tract, and mycotic infection of the lungs is more prevalent than is generally suspected. It should always be considered in patients with pulmonary symptoms resembling tuberculosis whose sputums are consistently negative for tubercle bacilli. The diagnosis of primary bronchopulmonary mycosis is often not made until postmortem and microscopic examinations of the tissues reveal the true nature of the infection, the presence of fungi in the sputum during life having been considered as insignificant contaminants. The fungi that invade the bronchopulmonary system are yeastlike organisms (cryptococci, oidia, monilia, saccharomyces and endomyces) and filamentous forms, such as the actinomyces group. The repeated finding of a fungus in sputum from a patient suffering from mild or severe pulmonary inflammation is strong presumptive evidence of a fungous infection. While this of itself is not sufficient to make a diagnosis of primary infection, the absence of any other definite etiologic evidence supports such a diagnosis. A mycotic infection may run a mild course in which the patient's general condition remains good with little fever and a few chest symptoms resembling a chronic bronchitis. These cases frequently clear up without complications. But there is another more serious type which runs a malignant course. The patient loses weight and has a cough with hemoptysis. The sputum frequently has a nauseating foul odor which is of diagnostic aid. The physical signs and character of the disease resemble those of tuberculosis. Examination of the chest may show rales and patches of dulness. Roentgenograms cannot differentiate between the two diseases because the changes are similar. The diagnosis depends on aspirating affected exudate and developing cultures on specially prepared mediums. The characteristic observation in most of these infections is the disproportion between the symptoms and the amount of pathologic change. The cough is usually only moderately severe, without a large amount of expectoration; there is a possible fever, and the leukocyte count is seldom more than 10,000. A history of a previous influenza or pneumonia is often elicited suggesting the importance of lowered tissue resistance in its production. According to Vadalà, during the last five years 350 cases have been referred to him for diagnostic bronchoscopy, which have comprised cases of bronchitis, silicosis, pulmonary tuberculosis and asthma. At the time of the endoscopic examination, routine cultures were taken from each of the large bronchi and examined for fungi. A survey since 1919 shows that numerous clinical diagnoses of bronchiectasis and pulmonary tuberculosis have been made without the presence of tubercle bacilli in the sputum. In a certain number of these, postmortem examination revealed pulmonary mycosis. Roentgenograms of mycotic or pulmonary tuberculosis suspects with no tubercle bacilli in the sputum are available in all these cases. The clinical histories of eleven cases, illustrating the characteristic changes present in such cases, are reported. The difference in the pathologic picture presented by the various mycoses (actinomycetes, moniliasis, bronchomoniliasis, coccidioidomycosis, sporotrichosis, blastomycosis and aspergillosis) in their invasion of the bronchopulmonary system are made evident by a detailed discussion of the several principal types of this group of infections. Treatment of mycotic infections depends on isolation of the organism. The iodides offer the most hopeful method of cure, making differentiation from tuberculosis imperative, as iodides in tuberculosis are detrimental.

Bronchoscopy for Postoperative Atelectasis.—Perrone states that bronchoscopic treatment of postoperative atelectasis is by no means a strenuous procedure, as the actual operating time is only two or three minutes. He reports the ninety cases encountered in six years at the Mercy Hospital, Pittsburgh. Sixty-five of the patients were male and twenty-five female. Nine patients were between 7 and 15 years of age, fifteen between 15 and 30, forty between 30 and 50, and twenty-six between 50 and 85. Sixty-five cases followed operations on the upper part of the abdomen (cholecystectomy, gastrojejunostomy or appendicitis). Although gas and ether or ether alone were the most common anesthetics, atelectasis followed any type of anesthesia, even spinal and local. Seventy-four of the cases occurred between thirty-six and forty-eight hours following operation. Three cases occurred less than twelve hours after operation. Thirty-five cases occurred in the right lower lobe, twenty-three in the right lower and middle lobes, seventeen massive atelectases in the right and eight in the left lung and seven in the left lower lobe. The earliest manifestation of pulmonary atelectasis is the elevation of temperature, and then dyspnea, cyanosis, rapid pulse and chest pain. The relative mildness of the respiratory symptoms in some cases is explained on the basis of a gradually developing atelectasis and a gradual alteration in the intrapleural pressure and the vital capacity. The early diagnosis is at times dependent more on the physical examination than on x-ray observation. This is especially true in cases with minor degrees of atelectasis and in those in which the involved area lies within the cardiac shadow on the left side. The heart was definitely shifted in fifty-three, questionably in twenty-five and in twelve cases no displacement could be demonstrated. Bronchial obstruction is the most important factor in producing atelectasis. Its removal is most satisfactorily achieved by bronchoscopic aspiration. Once the obstruction is

removed, the lung reinflates. During the operative procedure, secretions that have collected in the pharynx, nasopharynx and trachea should be removed by suction. If an inhalation anesthesia is employed, a light narcosis should be used whenever possible to preserve the cough reflex. Carbon dioxide for inducing hyperventilation for deanesthetizing is of aid, but it does not prevent atelectasis. Atelectasis occurred with almost equal frequency among both the long and the short operative procedures. The postoperative position for least impediment of respiratory movements and for a greater vital capacity is the Fowler position with, whenever possible, frequent changing. Treatment should be instituted as soon as the diagnosis of atelectasis is made. A plan which the author found satisfactory is to stop all sedatives, encourage the patient to cough, move him from side to side and give carbon dioxide inhalations. If any improvement is to take place with this procedure it does so within eight to ten hours. If no drop in pulse and temperature or improvement of physical signs occurs a bronchoscopic aspiration is performed to remove the mucous plug. The aspiration is done in bed. In fifty-eight cases, after bronchoscopic aspiration, a drop in temperature, pulse and respiratory rates occurred in twelve hours, in twenty-two in twenty-four hours and in three in thirty-six hours. The patient almost immediately feels relieved of dyspnea and is able to cough up with ease any secretion which has not been aspirated. All the sputums showed pneumococci of some type. The largest number were type IV. All but seven patients made uneventful recoveries following bronchoscopy. One died of peritonitis and at necropsy the lung was found to be normal. The remaining six died of pneumonia.

Annals of Surgery, Philadelphia

111:925-1094 (June) 1940

Surgical Treatment of Brain Abscess by Exposure and Enucleation. R. A. Groff and F. C. Grant, Philadelphia.—p. 925.
*Treatment of Addison's Disease by Implantation of Synthetic Hormone. W. M. Firor, Baltimore.—p. 942.
Cysts, Sinuses and Fistulas of Thyroglossal Duct: Results in 293 Surgical Cases. J. deJ. Pemberton and L. K. Stalker, Rochester, Minn.—p. 950.
Results of Faciohypoglossal Anastomosis in Treatment of Facial Paralysis. C. C. Coleman, Richmond, Va.—p. 958.
*Frequency and Diagnosis of Hiatal Hernia. D. Guthrie and F. H. Jones, Sayre, Pa.—p. 971.
Umbilical and Midline Ventral Hernias. H. Mahorner, New Orleans.—p. 979.
*Hemolytic Jaundice. A. G. Brenizer, Charlotte, N. C.—p. 998.
Further Experiences in Construction of Vagina: Report of Twelve Cases. L. R. Wharton, Baltimore.—p. 1010.
Congenital Arteriovenous Angioma of Arm: Metastases Eleven Years After Amputation. R. Matas, New Orleans.—p. 1021.
Large False Aneurysm of Right Subclavian Artery Successfully Treated by Modification of Matas Operation: Case. W. D. Gatch, Indianapolis.—p. 1046.
Hysterical Edema of Hand and Forearm. C. Williams, Richmond, Va.—p. 1056.
Caisson Disease, with Special Reference to Bones and Joints: Report of Two Cases. B. L. Coley and M. Moore Jr., New York.—p. 1065.

Implantation of Synthetic Hormone for Addison's Disease.—The synthesis of desoxycorticosterone acetate is the first instance in history in which a hormone has been synthesized before being isolated from its natural source. Firor determined the daily requirements of the hormone in sesame oil for seventeen patients with Addison's disease before implanting pellets of the hormone. He found that 0.5 mg. of the hormone in oil, given by daily injections, corresponds to a tablet weighing 125 mg. As many as twelve pellets were inserted through a single incision. The incisions are carried well into the subcutaneous fat. The pellets placed in the seventeen patients have met their requirements for cortical hormone for periods ranging from four to nine months. Several of the patients have had their second implantation, and in one of these it seems that there has been partial regeneration of cortical tissue. All but two of the group have returned to full activity and are working as strenuously as they did previous to their illness. Every patient has gained weight. The improvement in both diastolic and systolic blood pressure has been uniform. None of the patients have shown any suggestion of hypertension. All the patients had maintained a positive sodium and chloride balance. They have kept normal concentrations of potassium, sodium and chloride ions in the blood plasma. Similarly, the hematocrit and plasma volume determinations returned to normal after treatment was begun and have remained so. Some of the patients have shown a decrease in the pigmentation of their skin, but none have lost all the pigmentation. No patient has shown any untoward effect from the treatment. The author warns that, since the rate of absorption depends on the consistency and surface area of the pellets, improperly prepared pellets might crumble and cause a too rapid absorption of this potent hormone. Patients suffering from Addison's disease should be under careful supervision for at least two weeks after the implantation of the pellets. At present the government has not authorized the sale of desoxycorticosterone acetate nor has it been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

Frequency and Diagnosis of Hiatal Hernia.—Guthrie and Jones state that the incidence of hiatal hernia is higher than one would expect. Many more cases are being recognized each year than previously. If the condition is kept in mind when examining the patient with atypical gallbladder or stomach complaints, a larger number will be discovered. Low substernal distress, inconstant and mild in character, especially after large meals, is an important symptom. The roentgenologist should always examine the esophagus and the stomach with the patient in the recumbent and upright positions. It is well to know that the condition exists so that in the event of an increase in symptoms the patient will not undergo a needless operation for a suspected abdominal lesion or be placed on a cardiac regimen. Not all of the lesions are surgical conditions and conservatism can be adhered to in many cases. At the Guthrie Clinic there were five cases of hiatal hernia from June 1927 to January 1938 in which operation was performed. Since then and up to November 1939 fourteen cases have been encountered. Ten of the fourteen patients have been females. Nine were treated by conservative means. One was treated conservatively plus a dilation of the esophagus. For another a phrenectomy was the only operative procedure. On three, phrenectomy was performed and the enlarged hiatal opening was repaired.

Hemolytic Jaundice.—Brenizer reports four cases of the congenital (familial) and two of the so-called acquired type of jaundice. The six cases illustrate most of the observations on hemolytic jaundice. The two acquired cases would seem sporadic and individual as far as a thorough inquiry into the two family histories shows. The author believes that the acquired type is much more severe than the congenital or familial type. Hemolytic jaundice is an entity and should be easily recognized by a syndrome consisting of acholuric jaundice, enlarged spleen, anemia, crises with pain and fever, increased fragility of the erythrocytes, increase of reticular cells, urobilin but no bilirubin in the urine, normal colored stools, increased icterus index, negative direct van den Bergh with positive indirect van den Bergh reaction and absence of itching. The congenital or familial type may embrace all cases. Hemolytic syndromes are probably due to hemolysins, possibly of different types and present in different amounts, functioning slowly in some cases and violently in others. The hemolytic anemias are in all probability due to the effects of the varying activity of hemolysins. Splenectomy offers its greatest triumph in treatment. There are few operations as dramatic. A gain of a million erythrocytes may be obtained during its performance. The autotransfusion and deluge of erythrocytes into the blood stream are life saving. Further study of the reticulo-endothelial system, bone marrow and liver might aid in establishing a more definite pathologic groundwork for hemolytic jaundice, especially since the organ removed shows but little histopathologic change. The fact that it shows little change beyond the engorgement with remnants of erythrocytes and their pigment is one of the most characteristic points of hemolytic jaundice. The liver and kidney are often as much pigmented, and the considerably enlarged liver before splenectomy is of normal size four months after operation. Gallstones and evidence of cholecystitis figure high in cases of hemolytic jaundice. Since the removed spleen has little to show for itself pathologically, but its removal usually brings about a cure, what stops the destruction and fragility of the erythrocytes? While congenital and acquired hemolytic jaundice are chronic, one of their characteristics is the attacks or crises of erythrocyte destruction.

Archives of Ophthalmology, Chicago

24:1-220 (July) 1940

Some Fundamental Physiologic Principles in Study of Visual Field. H. L. Bair, Rochester, Minn.—p. 10.
Atopic Cataracts. W. P. Beetham, Boston.—p. 21.
Effect of Local Typhoid H Antibody Concentration on Production of Corneal Ulcers in Rabbits. A. L. Brown, Cincinnati.—p. 38.
*Retrobulbar Neuritis: Observations on 100 Cases. F. D. Carroll, New York.—p. 44.
Isolated Congenital Absence of Inferior Rectus Muscle: Report of Two Cases in Which Operation Was Performed. V. G. Casten, Boston.—p. 55.
Intra Diem Tension Studies in Chronic Simple Glaucoma. P. A. Chandler, Boston.—p. 62.
Waltzing Guinea Pigs, with Particular Reference to Ocular Movements and Righting Reflexes. D. G. Cogan, Cambridge, Mass.—p. 78.
Tumor of Lacrimal Caruncle: Study of 200 Collected Cases. W. H. Evans, Youngstown, Ohio.—p. 83.
Perspectives in Glaucoma Research. J. S. Friedenwald, Baltimore.—p. 107.
Use of Fluorescein Intravenously as Aid to Ophthalmic Diagnosis and Treatment. H. Gifford, Omaha.—p. 122.
*Convalescent Blood for Treatment of Herpes Zoster Ophthalmicus: Second Report. T. Gundersen, Boston.—p. 132.
Antagonism Between Adrenergic Drugs and Atropine in Isolated Iris Dilator. P. Heath and E. Sachs, Detroit.—p. 142.
Sympathetic Ophthalmia: Clinical Review of Sixty-Three Cases. R. Irvine, Los Angeles.—p. 149.
Determination and Significance of Photopic Retinal Visibility Curve. E. Ludvigh, Boston.—p. 168.
Recent Advances in Care of Insensitive Cornea. A. E. MacDonald, Toronto.—p. 182.
Relation of Drusen of Optic Nerve to Tuberous Sclerosis. A. B. Reese, New York.—p. 187.
Malignant Melanoma—So-Called Sarcoma—of Uvea: III. Extension into Optic Nerve. T. L. Terry, Boston.—p. 206.
Corneal Involvement in Congenital Ichthyosis (Keratoderma). D. Vail, Cincinnati.—p. 215.

Retrobulbar Neuritis.—Carroll reviews the data in 100 cases of retrobulbar neuritis observed during four years and examined by him. During the same period he encountered sixty-five patients with "toxic" amblyopia associated with deficient diets or with excessive use of tobacco or alcohol. Also excluded from discussion is toxic amblyopia produced by known toxic agents: lead, arsenic and thallium. Complete neurologic, x-ray, allergic and medical examinations were carried out so that an etiologic diagnosis could be established. The average age of the patients when first examined because of blurred vision was 32.7 years; the extremes were 7 and 70. The causative factors in the 100 cases seemed to be multiple sclerosis in thirty-seven, Leber's disease in nine, encephalomyelitis in eight, arachnoiditis in three, vascular disease in three, sinusitis in two, syphilis in two, postspinal anesthesia in one and neuromyelitis optica in one. The cause of the retrobulbar neuritis was not determined in thirty-four cases. If the etiologic agent is known, treatment should be directed toward its elimination. When it is unknown, treatment is of questionable value. Hospitalization during the acute attack is probably advisable. Tumor of the brain and tobacco-alcohol amblyopia are to be differentiated from retrobulbar neuritis. Most patients noticed sudden decrease of vision in one eye. Sometimes this was observed on waking in the morning and sometimes while working or playing. The vision grew worse after the first change. A few patients reported loss of sight in one eye or in both eyes with no further change or with subsequent slight improvement. A few patients stated that vision had decreased in the two eyes gradually and at about the same rate. The two eyes of seventy-eight patients were involved, often not at the same time. Many patients complained of a large blindspot in the center of vision, and some with bilateral spots stated that they saw better in dull light. Pain was an important symptom. Twenty patients volunteered the information that the involved eye was painful on movement; others admitted having pain when questioned. The eyeball was often tender to palpation. Sometimes pain was referred to as "deep" or "behind the eyeball." Other patients had severe headaches at the time of onset. The cause of the headaches is speculative. A mild, localized meningeal involvement may be the cause in some cases. The visual acuity in the involved eyes was markedly reduced in most. The characteristic field change was a central scotoma. There was usually no change in the normal appearance of the disks in the early stages of the disease. Blurring of the margins of the disk occurred sometimes. Pallor of the optic nerve usually developed temporally after a few weeks. The unreliability of contraction of the pupil to light as a sign of retrobulbar neuritis was indicated by its demonstration in several normal eyes.

Convalescent Blood for Herpes Zoster Ophthalmicus.—Gundersen adds twelve cases of herpes zoster ophthalmicus to the ten reported in 1935 in which the transfusion of from 250 to 450 cc. of convalescent blood was beneficial. The results of the present cases confirm the previous conclusions. Of the twenty-two patients who were treated, eighteen retained useful vision (better than 6/18) in the affected eye and four lost useful vision. Of thirty-nine similar patients who received no specific therapy, fifteen lost useful vision and five had seriously impaired vision. The author concludes that, if the convalescent serum is given before ocular infection is well established, good results may be expected.

Archives of Surgery, Chicago

41:1-208 (July) 1940

Traumatic Intracerebral Hemorrhage, with Particular Reference to Its Pathogenesis and Its Relation to "Delayed Traumatic Apoplexy." C. B. Courville and O. A. Blomquist, Los Angeles.—p. 1.
Ewing's Sarcoma (Endothelial Myeloma). J. F. Hamilton, Memphis, Tenn.—p. 29.
Catgut Sutures and Ligatures: Greater Efficacy Achieved Through Observance of Certain Details. C. F. Horine, Baltimore.—p. 53.
Spontaneous Pneumothorax Following Positive Pressure Intratracheal Anesthesia: Report of Case. A. F. Heidrick, W. E. Adams and H. M. Livingstone, Chicago.—p. 61.
Problem of Carcinoma of Breast: Radical Mastectomy in Ninety Cases. C. A. Kunath, San Angelo, Texas.—p. 66.
Effects of Local Reaction in Spontaneous Tumors of Animals and Human Beings. F. M. Allen, New York.—p. 79.
*Splenectomy in Treatment of Banti's Syndrome. E. H. Barg and J. W. Dulin, Iowa City.—p. 91.
Demonstration of Capillary Permeability Factor in Tissue Extracts from Normal Rabbits. R. H. Rigdon, Nashville, Tenn.—p. 96.
Capillary Permeability in Areas of Inflammation Produced by Xylene. R. H. Rigdon, Nashville, Tenn.—p. 101.
Resection of Carcinomatous Rectosigmoid Juncture with Reestablishment of Intestinal Continuity: Subsequent Report. H. R. Arnold and J. F. Shea, San Francisco.—p. 110.
*Evaluation of Injection Treatment of Hernia in Older Patients: Three Year Statistical Analysis. L. Manoil, New York.—p. 114.
Pathology of Shock in Man: Visceral Effects of Trauma, Hemorrhage, Burns and Surgical Operations. H. A. Davis, New Orleans.—p. 123.
Differential Diagnosis of Mechanical and Paralytic Ileus, with Special Reference to Early Diagnosis of Strangulated Obstruction. J. B. Haworth and L. H. Garland, San Francisco.—p. 147.
Review of Urologic Surgery. A. J. Scholl, Los Angeles; F. Hinman, San Francisco; A. von Lichtenberg, Budapest, Hungary; A. B. Hepler, Seattle; R. Gutierrez, New York; G. J. Thompson, J. T. Priestley, Rochester, Minn.; E. Wildbolz, Berne, Switzerland, and V. J. O'Conor, Chicago.—p. 154.

Splenectomy in Banti's Syndrome.—According to Barg and Dulin there have been forty-three cases since 1922 at the State University Hospitals of Iowa which have fulfilled the diagnosis of Banti's syndrome. Half of these patients (twenty-two) were treated by splenectomy and the remainder conservatively. The two groups are compared to determine the effects of splenectomy. The operative deaths numbered six (27 per cent) and two additional patients died in the hospital. Of the fourteen patients who left the hospital, twelve have been followed. Four of these have died: three from gastro-esophageal hemorrhage and one from an unknown cause. Four are alive and have been free from all symptoms for from two to nine years. Two are much improved. The remaining two have occasional esophageal hemorrhages and one of them requires frequent paracentesis. Of the twenty-one patients on whom splenectomy was not performed, six are living. Two have been in fair health, but in some of the others the symptoms showed a progressive increase. Eleven of the twenty-one are known to be dead; one lived for three years, and all the others died within one year after discharge from the hospital. The authors believe that splenectomy is the treatment of choice in Banti's disease and should be performed in the early stages. It may be contraindicated in elderly patients because of the high operative mortality, but three of the patients who were over 60 years of age have been greatly improved after operation. Splenectomy relieved the ascites. An extensive collateral circulation is developed between the region of the splenic bed and the abdominal walls. The authors do not perform an omentopexy, although in some of their recent cases the greater omentum has been rotated into the splenic bed, as it is felt that this increases the collateral circulation. Splenectomy has not assured relief

from gastro-esophageal hemorrhages. Patients with rapidly developing symptoms before operation respond poorly to splenectomy.

Injection Treatment of Hernia in Older Patients.—Manoil presents a brief analysis of cases of hernia treated by the injection method. During the period between February 1936 and February 1939, 158 hernias in 123 patients were treated by the injection method at the author's clinic. Ninety-two per cent of these patients were between 41 and 90 years of age. Recurrence took place in twenty-six, or 16.4 per cent, of this group, and five patients, or 3.2 per cent, were operated on after injection, making a total percentage of failures of 19.6. In the fifteen younger patients between 11 and 40 years of age there were no recurrences. There were no infections and no mortality. The author believes the injection treatment to be indicated in older patients who are considered poor surgical risks and because of their state of nutrition or other coexisting conditions. It is also indicated in younger patients who refuse operation but are willing to cooperate in this treatment even though it is prolonged. Best results may be expected in the case of a small inguinal hernia. This series, however, includes not only large indirect inguinal but direct inguinal, postoperative recurrent inguinal, scrotal, femoral, umbilical and postoperative ventral types. Most of these were of many years' duration. All of them can be helped provided they are completely reducible and can be kept reduced with comfort during the course of treatment. In addition to a safe and effective sclerosing solution, the use of a well fitting truss is essential. It must be worn day and night during the course of injections, which takes from six to eight weeks if given two or three times a week. Thereafter the patient may remove the truss at night but must wear it during the day for from four to six months.

Bulletin New York Academy of Medicine, New York

16:429-498 (July) 1940

Heart Disease: A World Problem. P. D. White, Boston.—p. 431.
The Menopause. E. Shorr, New York.—p. 453.
Clinical Aspects of Rheumatic Fever in Children. A. T. Martin, New York.—p. 475.
Purposes, Function and Use of Standard Classified Nomenclature of Disease. G. Baehr, New York.—p. 483.
Adaptation of Standard Classified Nomenclature of Disease to Hospital Morbidity Reports. E. H. L. Corwin, New York.—p. 489.

Canadian Public Health Journal, Toronto

31:259-306 (June) 1940

Postsanatorium Care of Tuberculous Patients in Ontario. C. A. Wicks, Toronto.—p. 259.
Housing and the National Housing Act. G. H. Ferguson, Ottawa, Ont.—p. 271.
Clinical Cases of Diphtheria Occurring in Patients Who Had Previously Received One Injection of Alum Precipitated Diphtheria Toxoid. J. N. Murphy Jr., E. B. Cook and S. W. Bohls, Austin, Texas.—p. 276.
Psychiatric Social Work with Recessive Adolescents. Isabel J. Dalzell, Toronto.—p. 280.
Incidence of Enterobiasis in Children in Convalescent Home in Toronto. E. Kuitunen-Ekbaum, Toronto.—p. 287.

Connecticut State Medical Journal, Hartford

4:377-436 (July) 1940

What Do People Need for Their Health and Medical Care? H. Emerson, New York.—p. 377.
Results in Treatment of Epileptics with Sodium Diphenyl Hydantoinate (Dilantin). M. E. Brodsky, J. J. O'Neil and E. Zsiga, Bridgeport.—p. 385.
Placental Blood Bank. S. Spinner, New Haven.—p. 387.
Endometriosis. E. A. Herr, Waterbury.—p. 389.
Renal Function in Adrenal Insufficiency. D. C. Darrow, New Haven.—p. 393.
Vulvovaginitis in Children: Summary of Series of Fifty-Nine Cases. L. Newton and M. S. Popkin, Bridgeport.—p. 395.
What Is a Neurosurgical Emergency? W. J. German, New Haven.—p. 398.
Modern Treatment of Pneumonia. T. S. Evans, New Haven.—p. 400.

Delaware State Medical Journal, Wilmington

12:137-154 (June) 1940

Hormone Therapy: Its Uses and Abuses. C. W. Dunn, Philadelphia.—p. 137.
Clinical Manifestations of Leukemia. G. E. Farrar Jr., Philadelphia.—p. 142.
Heredotraumatic Kyphosis of Bechterew. H. G. Hadley, Washington, D. C.—p. 146.

Journal of Clinical Investigation, New York

19:555-684 (July) 1940

Iodine Components of Blood: Circulating Thyroglobulin in Normal Persons and in Persons with Thyroid Disease. J. Lerman, Boston.—p. 555.
Effect of Application of Tourniquets on Hemodynamics of Circulation. R. V. Ebert and E. A. Stead Jr., Boston.—p. 561.
Exacerbation in Chronic Glomerulonephritis. D. Seegal, J. D. Lyttle, Emily N. Loeb, Elizabeth L. Jost and Grace Davis, New York.—p. 569.
Studies on Intrapulmonary Mixture of Gases: I. Nitrogen Elimination from Blood and Body Tissues During High Oxygen Breathing. R. C. Darling, A. Cournand, J. S. Mansfield and D. W. Richards Jr., New York.—p. 591.
Id.: II. Analysis of Rebreathing Method (Closed Circuit) for Measuring Residual Air. A. Cournand, R. C. Darling, J. S. Mansfield and D. W. Richards Jr., New York.—p. 599.
Id.: III. Open Circuit Method for Measuring Residual Air. R. C. Darling, A. Cournand and D. W. Richards Jr., New York.—p. 609.
Studies on Anacidity: Hydrogen Ion Concentration of Gastric Secretion, Gastroscopic Appearance of Gastric Mucosa and Presence of Gastric Secretory Depressant in Patients with Anacidity. J. B. Kirsner, P. B. Nutter and W. L. Palmer, Chicago.—p. 619.
*Effect of Exercise on Volume of Blood. N. L. Kaltreider and G. R. Meneely, Rochester, N. Y.—p. 627.
Study of Effects of Sulfanilamide on Acid-Base Metabolism. W. W. Beckman, Elsie C. Rossmeisl, R. Barbara Pettengill and W. Bauer, Boston.—p. 635.
*Serum Urate in Relatives of Gouty Patients. J. H. Talbott, Boston.—p. 645.
Studies on Pain: New Method for Measuring Pain Threshold: Observations on Spatial Summation of Pain. J. D. Hardy, H. G. Wolff and H. Goodell, New York.—p. 649.
Id.: Measurement of Effect of Morphine, Codeine and Other Opiates on Pain Threshold and Analysis of Their Relation to Pain Experience. H. G. Wolff, J. D. Hardy and H. Goodell, New York.—p. 659.
Amylolytic and Phosphatase Activity of Liver Tissue in von Gierke's Disease. S. J. Thannhauser, S. Z. Sorkin and N. F. Boncoddo, Boston.—p. 681.

Effect of Exercise on Blood Volume.—Kaltreider and Meneely determined the volume of blood at rest and during and after varying grades of exercise in seven normal subjects and in five individuals with heart disease. The blood hemoglobin and viscosity, serum proteins and venous pressure were studied. In normal individuals during moderate exertion there was a prompt and definite decrease in the plasma volume accompanied by a corresponding decrease in the blood volume, while the changes in the cell volume were variable though slight. These changes were associated with an increase in the blood hemoglobin and viscosity, the serum proteins and the venous and arterial pressures. Following exercise the plasma volume gradually increased and twenty-five minutes after exercise the plasma volume, blood hemoglobin and serum proteins reached the preexercise values. During exhaustive exercise in normal subjects there was a further decrease in plasma volume accompanied by a moderate increase in the cell volume. Twenty-five minutes after exercise the plasma volume was still diminished and the blood hemoglobin and serum proteins were increased. In patients with compensated heart disease the changes in the blood volume during and following exercise were similar to those of normal subjects. The increase in erythrocytes and hemoglobin concentration resulting from exercise is brought about mainly by passage of protein-poor fluid from the vascular system into the interstitial spaces. New cells are added to the circulating blood only during severe or exhaustive exercise.

Serum Urate in Relatives of Gouty Persons.—Talbott presents data obtained from a five year investigation of 136 blood relatives of twenty-seven persons with gout. A clinical diagnosis of gout was apparent in each of the patients, and in twenty-three there was x-ray evidence of gouty arthritis. The concentration of serum urate was determined four or more times. In all but one patient it was greater than 6 mg. per hundred cubic centimeters. In patients with unexplained joint disease with no renal insufficiency or leukemia, an elevation of serum urate above 6 mg. constitutes evidence, except in patients more than 60 years of age, of gouty arthritis. Not one of the 136 relatives appeared to be suffering from gout or gouty arthritis; two had rheumatoid arthritis, six degenerative joint disease and two rheumatic heart disease. The remainder were in apparent good health. The concentration of serum urate was determined one or more times in each relative and the concentration of 102 was less than 6 mg. per hundred cubic centimeters; average, 4.6 mg. The serum urates of the remaining thirty-four relatives

ranged from 6.1 to 10.8 mg. per hundred cubic centimeters; average, 7.3 mg. The determination was repeated in thirteen of these subjects one or more times within four years of the original observation and found elevated. The serum nonprotein nitrogen concentration was less than 35 mg. per hundred cubic centimeters in each instance. Intravenous phenolsulfonphthalein and urine concentration tests were studied in a few and found normal. Other causes of increased serum urate were excluded tentatively by the medical history and by physical examination. It is concluded that an elevation of serum urate is intimately associated with the constitutional gouty diathesis and is not the result of renal disease. Three of the thirty-four subjects have since had one or more attacks of acute arthritis. One or more joints of the legs were involved. X-ray changes or subcutaneous tophi were not demonstrable. A presumptive diagnosis of gout is probably justified in these three subjects on the basis of family history, elevated serum urate and an acute attack of arthritis. Not one of the 102 subjects who had a concentration of serum urate less than 6 mg. per hundred cubic centimeters has had any acute attacks suggesting gouty arthritis.

Journal Industrial Hygiene & Toxicology, Baltimore

22:199-252 (June) 1940

Relative Retention by Growing Rats of Lead Ingested in Water and in Food, and in Soluble and Insoluble Forms. J. B. Shields, H. H. Mitchell and W. A. Ruth, Urbana, Ill.—p. 199.

Acute and Chronic Toxicity of Triethanolamine. V. H. Kindsvatter, Philadelphia.—p. 206.

Exposure to Fluorine in Industry. W. Machle and E. E. Evans.—p. 213.

Response Attending Exposure of Laboratory Animals to Vapors of Methyl Bromide. D. D. Irish, E. M. Adams, H. C. Spencer and V. K. Rowe, Midland, Mich.—p. 218.

Determination of Carbon Disulfide in Blood and Urine. A. W. Hunter, Marcus Hook, Pa.—p. 231.

Treatment of Casualties from Lung Irritant Gases, with Particular Reference to Use of Oxygen and Carbon Dioxide Mixture. A. T. Jones, Widnes, England.—p. 235.

Seasonal Changes in Body's Response to Ventilative Conditions. D. L. MacLean and R. C. Partridge, Toronto.—p. 244.

Code for Safe Concentrations of Certain Common Toxic Substances Used in Industry. M. Bowditch, C. K. Drinker, P. Drinker, Boston; H. H. Haggard, New Haven, Conn., and Alice Hamilton, Washington, D. C.—p. 251.

Journal of Investigative Dermatology, Baltimore

3:159-250 (June) 1940

Effect of Roentgen Rays on Skin Reactivity to Histamine and Bacterial Vaccine: Review of Literature and Discussion of Mode of Action of Roentgen Rays in Inflammatory Processes. B. Shaffer, Philadelphia.—p. 159.

Perianal Moniliasis and Associated Pruritus Ani Cured by Specific Desensitization. L. P. Fowle, R. R. Legault, Naomi Heritage and Adelaide M. Delluva, Lewisburg, Pa.—p. 193.

Effect of Unilateral Cervical Sympathectomy on Reactions of Skin. H. Biberstein, New York.—p. 201.

Unresponsiveness of Human Skin to Wheal Formation. H. L. Alexander, R. Elliott and E. Kirchner, with technical assistance of D. Bottom, St. Louis.—p. 207.

Local Allergic Phenomena in Circinary Impetigo: Contribution to Etiology of Staphylococcic Impetigo Contagiosa. S. Epstein, Marshfield, Wis.—p. 223.

Regional Changes and Changes Caused by Age in Normal Skin: Histologic Study. W. R. Hill and H. Montgomery, Rochester, Minn.—p. 231.

New England Journal of Medicine, Boston

222:1029-1066 (June 20) 1940

Excessive Acetylation of Sulfanilamide in Advanced Renal Disease: Report of Case. J. G. Allen, Chicago.—p. 1029.

Use of Circulation Time Determinations in Diagnosis of Venous-Arterial Shunts. E. Yasuna and S. Kowal, Boston.—p. 1031.

222:1067-1104 (June 27) 1940

*Effect of Sulfanilamide on Length of Life of Patients with Subacute Bacterial Endocarditis. H. H. Steele, Deadwood, S. D.—p. 1067.

Sodium Morrhuate in Treatment of Epicondylitis of Humerus: Report of Five Cases. F. A. Slowick, Pittsfield, Mass.—p. 1071.

Some Opportunities of the Medical Profession. J. B. Woodman, Franklin, N. H.—p. 1074.

Electrocardiography in General Medicine. L. B. Ellis, Boston.—p. 1078.

Sulfanilamide in Subacute Bacterial Endocarditis.—In the past nine years, seventy-six proved cases of subacute bacterial endocarditis, according to Steele, were treated at the University of Chicago Clinics. The diagnosis was based on the presence of active endocarditis, fever, positive blood culture and embolic phenomena. Eighteen of the cases were treated with sulfanilamide. Cases in which Streptococcus viridans was grown on blood culture were considered. These fourteen cases were studied in order to determine the effect of the drug on bacteremia, fever and time of survival. Sulfanilamide therapy had no effect on the general course of thirteen cases of subacute bacterial endocarditis. The main beneficial effect was a fall in the number of bacteria in the blood stream. In one case there was a definite drop in the temperature curve coincident with the administration of sulfanilamide; in other cases it was thought possible that lowering of the level was related to use of the drug. No severe toxic effects were noted. One case of hemolytic anemia was observed. There was one case of dermatitis believed due to sensitization of the skin to sunlight by sulfanilamide. Nausea, headache and papilledema were also noted and were believed to have been caused by the drug. Ten of the forty patients in whom the date of death could be determined had received sulfanilamide. These ten survived from one to eleven months after onset, the average being 5.6 months. In the thirty patients who had received no sulfanilamide, the time of survival ranged from two to seventeen months, the average being 5.6 months. Thus the average survival was the same in the two groups, but three of the patients who received no sulfanilamide survived longer than eleven months, whereas none of those treated with the drug did. This might be interpreted as indicating that sulfanilamide actually shortened the time of survival.

Oklahoma State Medical Assn. Journal, Oklahoma City

33:1-58 (June) 1940

Minor Complications of Pregnancy and Their Treatment. B. D. Faris, Oklahoma City.—p. 1.

Oculoglandular Tularemia. J. F. Gorrell, Tulsa.—p. 4.

Management of a Few Urologic Conditions. M. H. Newman, Shattuck.—p. 5.

Recommendations in Routine Anesthesia Procedure. H. B. Stewart, Tulsa.—p. 8.

Management of Minor Anal Pathology. C. Rosser, Dallas, Texas.—p. 12.

Philippine Medical Association Journal, Manila

20:193-254 (April) 1940

Fate of Culion Patients Presented to the Local Negative Examining Committee from 1922 to 1938. J. Manalang, Culion.—p. 193.

Postgraduate Work in Pediatrics. J. S. Garcia, Dumaguete, Oriental Negros.—p. 203.

Plea for Hematologic Appraisal of Blood of Prospective Donors. R. J. Navarro and P. L. Cabigting-Chavez, Manila.—p. 211.

Thoracotomy in Treatment of Empyema Thoracis in Children. J. Albert and A. P. Jongco, Manila.—p. 219.

Public Health Reports, Washington, D. C.

55:1003-1056 (June 7) 1940

Disinsectization of Aircraft. C. L. Williams.—p. 1005.

*Studies in Childbirth Mortality: I. Puerperal Fatality and Loss of Offspring. J. Yerushalmy, M. Kramer and E. M. Gardiner.—p. 1010.

Leprosy: Vitamin B_1 Deficiency and Rat Leprosy. L. F. Badger, E. Masunaga and D. Wolf.—p. 1027.

Puerperal Fatality and Loss of Offspring.—Yerushalmy and his associates state that among 255,727 resident mothers of New York State (exclusive of New York City) there were 258,525 live and still births during 1936, 1937 and 1938. During this time 1,122 puerperal deaths were recorded. A thorough search of the vital statistics files produced birth and stillbirth certificates for 689 deliveries in which death of the mother occurred. For the remaining 433 deaths for which no birth certificate could be found, it was established with reasonable certainty that 224 of the maternal deaths were associated with abortion or miscarriage, seventy-four were ectopic pregnancies, ninety-three died undelivered, twenty-four probably died undelivered and in eighteen it was questionable whether death was associated with the delivery of a viable offspring or with an abortion or miscarriage. Some of these may represent unregistered births. The death certificate of infants who died within one month was matched with the birth certificate of the same infant as were the death certificates of the mothers and the birth certificates of the infants. The information from the matched certificates was brought together on a single punch card. The average interval between the birth of a child and the death of

a mother was 9.1 days. The first twenty-four hours (37 per cent) after delivery was the most hazardous time. Similarly, the first hour after the birth took the greatest toll of children. Mothers dying from hemorrhage survived the shortest average interval (2.2 days), mothers dying from septicemia the longest interval (18.6 days). The death of a mother and the loss of an offspring were associated. The puerperal fatality rate was 19.3 per 10,000 deliveries when the infant was born alive and 298.7 when the infant was born dead. The rate for mothers whose infants survived the neonatal period was 16.6 and for mothers whose infants died in less than one month it was 108. Similarly, the stillbirth rate was 27 per thousand total births for infants of surviving mothers and 300.4 for infants whose mothers died in childbirth. Septicemia was the most frequent cause of death for mothers of live births and toxemia for the mothers of stillbirths. The average interval between delivery and death for mothers whose infants were born alive was 10.9 days, for mothers of stillborn infants 4.9 days. Mortality of both mother and infant increased sharply when pregnancy terminated prematurely. The puerperal fatality rate was 20.1 when birth was at term and 141.3 when it was premature. For premature stillbirth infants it was 247.8 and the neonatal mortality rate was 373.8. Septicemia was the most common cause of death of mothers who went to term and toxemia for the mothers of premature deliveries. No difference was noted in the puerperal fatality rate by sex of the infant, while the stillbirth and neonatal rates were higher for boys than for girls. The respective rates for males and females were 29.4 and 26 for stillbirths and 34.2 and 25.6 for neonatal mortality. The puerperal fatality, stillbirth and neonatal mortality rates of plural births were three times as high as those for single births. The stillbirth rate for illegitimate infants was 60 and the neonatal mortality rate 63.2 as compared to the total respective rates of 27.8 and 30.

Southwestern Medicine, El Paso, Texas

24:185-220 (June) 1940

Present Trend of Medical Economics. W. B. Cantrell, Gallup, N. M. —p. 185.
Tumors of Lips. G. W. Jones, Philadelphia.—p. 188.
History of Treatment of Acute Fractures of Femoral Neck. A. E. Gallant, Los Angeles.—p. 190.
Helminthic Infections. C. M. Wheeler, San Francisco.—p. 195.
Infectious Mononucleosis with Jaundice. A. A. Chapman, Sweetwater, Texas, and J. Chapman, Sanatorium, Texas.—p. 200.

Surgery, Gynecology and Obstetrics, Chicago

71:1-128 (July) 1940

Cancer and Its Relations to Pregnancy, to Delivery and to Marital and Social Status: I. Cancer of Breast and Genital Organs. S. Peller, Baltimore.—p. 1.
Nupercaine Anesthesia. L. V. Hand and L. F. Sise, Boston.—p. 9.
Regional Fibrocystic Disease. C. O. Adams, E. L. Compere, Chicago, and J. Jerome, Traverse City, Mich.—p. 22.
Studies on Ileocecal Junction (Ileocecus). J. A. Bargen, H. R. Wesson and R. J. Jackman, Rochester, Minn.—p. 33.
Choledochal Denervation: New Procedure for Relief of Biliary Dyskinesia. H. Reich, Newark, N. J.—p. 39.
*Cancer of Ovary. J. V. Meigs, Boston.—p. 44.
*Appendicitis Among Individuals More Than 60 Years of Age. L. K. Stalker, Rochester, Minn.—p. 54.
Effect of Pregnancy on Excretion of Intravenous Diodrast in Rabbits. E. G. Crabtree, D. Abramson and S. H. Robins, Boston.—p. 60.
Roentgenographic Diagnosis of Lipoma. H. B. Hunt and J. D. Bisgard, Omaha.—p. 68.
Cholecystjejunostomy; as Opposed to Cholecystduodenostomy or Cholecystgastrostomy. F. H. Lahey, Boston.—p. 73.
*Surgical Treatment of Chronic Gastric Ulcer: Review of 272 Cases. W. Walters and O. T. Clagett, Rochester, Minn.—p. 75.
Idiopathic Segmental Infarction of Greater Omentum. B. Pines and J. Rabinovitch, Brooklyn.—p. 80.
Surgical Exposure of Ulna and Proximal Third of Radius Through One Incision. H. B. Boyd, Memphis, Tenn.—p. 87.
Congenital Rectovaginal Defects: Operative Repair. R. F. Carter and D. Lyall, New York.—p. 89.
Tubal Sterilization by the Madlener Method: Critical Analysis of Failures. A. L. Dippel, Baltimore.—p. 94.
Congenital Bilateral Absence of Kidneys: Critical Review with Report of One Additional Case. F. Hinman Jr., Baltimore.—p. 101.
Inversion of Uterus: Report of Five Personal Cases. L. E. Phaneuf, Boston.—p. 106.

Cancer of Ovary.—Meigs presents the results of 154 operations for cancer of the ovary at the Massachusetts General Hospital from 1901 through June 1934. Only twenty-five, or 15.5 per cent, of the patients are living. The tumors were of all sorts: large, small, papillary, smooth walled, cystic, solid, solid and cystic, white, yellow, hemorrhagic. They were divided into solid (the true solid tumor, the solid tumor with necrotic areas in it and the solid tumor with definite epithelial lined cystic areas in it, papillary and not papillary) and the definite papillary cystadenoma with small or large papillary projections inside and/or outside the tumor. The entirely solid and solid plus cystic carcinoma of the ovary is by far the most serious group. About one fourth are inoperable and the symptoms are of short duration. Some of the tumors have cystic areas in them but they are usually due to necrosis. The study of these tumors has made such an impression that if in the future there is any question of an ovarian tumor in any patient, or if the ovary is hard or unusual, the patient will either be examined with the peritoneoscope or operated on. It is inexcusable to observe and wait. In patients in menopause it is his intention to be radical. In the series discussed 44.4 per cent of the tumors were bilateral and only 9.3 per cent of the patients are living. Therefore both tubes, both ovaries, the uterus and cervix should be removed if possible. Even if there is no evidence of tumor in the other ovary it should be removed. Conservation of an ovary in a patient who has a solid epithelial tumor of one ovary should not be attempted. These tumors metastasize far and wide: to the umbilicus, the axilla, the bone. Malignant papillary cystadenomas are cystic and papillary. They may have large or only small masses of papillary tissue. The wall of the cyst may be penetrated or the papillary areas may be entirely enclosed. They are frequently adherent and may become widespread throughout the peritoneal cavity. The omentum may occasionally be full of tumor. They metastasize far and wide, as do the solid tumors. Because they are papillary, which means slower growth, and fewer become densely adherent or break through the wall of the cyst, the results are better than in the solid tumor. These tumors are frequently bilateral, 32.9 per cent. It is easy to conceive that a malignant tumor may develop in the other ovary and therefore both ovaries should be removed. The prognosis of the malignant papillary cystadenoma is about the same as that of other types of malignant disease. The rupture of cysts before and during operation is condemned, but the results of the series do not support the condemnation. Spilling of cyst contents should be avoided. Roentgen treatment to date has not proved of much curative value but more modern methods may.

Appendicitis Among the Aged.—Stalker points out that from 1 to 2 per cent of all cases of acute appendicitis occur in patients more than 60 years of age. The mortality among them is reported at about 25 per cent. General peritonitis and pneumonia are the most frequent fatality causes. Pulmonary embolism, cerebrovascular accidents, heart failure, septicemia, intestinal obstruction and other conditions account for some mortality. Eighty-two patients between 60 and 78 with appendicitis were seen from 1924 through 1938 at the Mayo Clinic. The appendix was ruptured in fifty-one and appendectomy was performed in twenty-six of these and in each of the thirty-one cases without rupture. In the remaining twenty-five ruptured appendixes simple drainage was carried out in twenty with a subsequent appendectomy in eight and conservative nonoperative treatment was instituted in five. There were thirteen, 15.9 per cent, deaths in the entire series. Nine deaths occurred in the series in which the appendix was ruptured; eight were due to general peritonitis and one to pneumonia. Two of the four deaths among the thirty-one cases without rupture were due to pneumonia, one to heart failure and one to pulmonary embolism. The type of anesthesia employed seemed to have no apparent influence on the mortality rate. In the thirty-one cases in which the appendix was unruptured there were seventeen cases with gangrenous appendix and fourteen showed varying degrees of acute purulent appendicitis. The duration of the disease was of less than twenty-four hours in twenty cases, less than forty-eight hours in eight and of more than forty-eight hours in three. The history was considered atypical in twenty of these thirty-one cases. In the fifty-one cases of ruptured appendixes there were only seventeen cases in which the duration of the disease was forty-eight hours or less. General peritonitis was present in twenty-nine patients, abscess formation in eleven, gangrenous appendix and some degree of localizing peritonitis in seven. The

history in at least thirty of these fifty-one patients was considered atypical. The symptoms were atypical in that they simulated intestinal obstruction and carcinoma. Any patient in this age group in whom lower abdominal cramplike pains develop with localization and tenderness over McBurney's point and with a leukocytosis must be suspected of having acute appendicitis. The peritoneum and the appendix of a patient in the late decades react differently to inflammation than in youth. The appendix shows an increasing amount of lymphoid tissue up to the age of 20, but from this period on atrophic and fibrous changes occur. The sensitivity of these people to pain is less and psychologically they are inclined to conceal illness. The presence of constipation in a large percentage of these patients seems significant. The appendicitis in many of these cases could be explained on these factors with a certain degree of appendical obstruction by fecaliths, anatomic appendical deformity, adhesive bands, contraction of the mesentery and the like. When obstructing factors are present and there is an already retarded circulation, with a decreased tissue resistance due to the disappearance of the lymphoid elements, it seems reasonable that the course of the disease should be rapid with early gangrene, perforation and peritonitis. Operation in this group must be modified to a certain extent. Not only is the patient a poor operative risk demanding the minimum of manipulation and anesthesia, but the appendix is almost always gangrenous or about to become so. Peritonitis is usually present and further dissemination of the infection should be avoided by conservatism in surgical intervention. Often simple drainage without further exploratory measures will bring about the best results.

Surgical Treatment of Chronic Gastric Ulcer.—Walters and Clagett report 272 consecutive cases of chronic gastric ulcer in which operation was performed at the Mayo Clinic followed for from one to five years. There were 220 men to fifty-two women, or a ratio of about 4.5:1. The majority of the lesions developed along the lesser curvature close to the angle of the stomach. The one major complication to which gastric ulcer is but duodenal ulcer is not subject is malignant change. The authors believe all gastric ulcers must be considered malignant until proved otherwise and should be treated surgically if they fail to respond promptly to medical management. When the symptoms have been of short duration, the lesion small and uncomplicated and the patient less than 40 years of age, medical management may be indicated. If the pain is relieved, the blood disappears from the stool, and the niche, on x-ray examination, disappears, the patient may be considered to have a benign ulcer. However the patient must continue medical management at home and undergo x-ray reexamination at least every three months. If at any time there is any evidence that the lesion has not remained completely healed, surgical exploration should be advised. Surgical treatment of chronic gastric ulcer is almost always indicated if the symptoms have been of long duration or have not responded to adequate medical management. Likewise, operation may be indicated if the symptoms are severe and disabling but of short duration. Surgical intervention is indicated in cases of bleeding, perforating and obstructing gastric ulcers. Posterior Pólya resection was used for 131 of the 272 patients, knife or cautery excision of the lesion combined with gastro-enterostomy was used in fifty cases and other procedures were used much less frequently but in some cases to good advantage when resection or excision and gastro-enterostomy were not feasible. Only one patient of the 162 who answered the questionnaires classified himself as having a poor or unsatisfactory result. This patient had had a simple excision of the ulcer, a procedure which is not recommended. The results were approximately equal for all types of surgical procedures indicating that the operation be fitted to the patient. Gastro-enterostomy without excision of the gastric ulcer seemed to give the least satisfactory results. However, on some occasions no other procedure is advisable or technically feasible. There was only one case of possible bleeding following operation and no cases of gastrojejunal ulcer were definitely proved following any of the procedures performed; however, some patients in each group at times had some mild distress. Disturbing symptoms or recurrence of ulceration is seldom encountered following operation.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

15:65-128 (June) 1940

*Syndrome Characterized by Ectodermal Dysplasia, Polydactyly, Chondrodysplasia and Congenital Morbus Cordis: Report of Three Cases. R. W. B. Ellis and S. van Creveld.—p. 65.

Clinical Picture of Staphylococcic Infections in Newborn. Jean Margery Cass.—p. 85.

*Vitamin K in Prenatal Prevention and Postnatal Treatment of Hemorrhagic Disease of Newborn. I. N. Kugelmass.—p. 97.

Lingual Application of Eumydrin in Treatment of Congenital Pyloric Stenosis. A. Wallgren.—p. 103.

Syndrome of Congenital Abnormalities.—Ellis and van Creveld observed in two children the following congenital abnormalities: ectodermal dysplasia affecting the hair, teeth and nails; polydactyly, chondrodysplasia, and congenital morbus cordis. The clinical picture is so striking that they believe a description of the syndrome is justified. Many atypical cases of achondroplasia and chondro-osteodystrophy with associated abnormalities have been recorded, but no detailed description of the syndrome is to be found. Some clinical particulars of a child who is an incomplete example of the same syndrome has been reported by McIntosh in 1933. Another instance is included in the present series. The most significant points in the family history of the three cases are that the parents of two were first cousins, and in no case were any of the features of the syndrome known to have existed in relatives. This is a reliable observation, for, with the exception of congenital morbus cordis, any one of the components (ectodermal defects, chondrodysplasia and polydactyly) would have excited comment in the family. It is therefore suggested that the syndrome had been inherited as a recessive gene or genes and had reappeared on the union of two individuals both carrying the recessive character. The ectodermal dysplasia must be considered as distinct both from the anhidrotic type, which occurs as a sex linked recessive or incomplete dominant, and from hypotrichosis and dystrophy of the nails, which occurs as a dominant. Polydactyly may occur as either dominant or recessive, but true achondroplasia is probably an incomplete dominant. Possibly a linkage of recessive genes would account both for the variety of the structures involved and for the extreme rarity of the syndrome. If such were the case, one might expect to find one or more components of the syndrome appearing separately in collaterals. In addition to the Laurence-Moon-Biedl syndrome and examples of ectodermal defect linked with abnormalities of the mesoderm, conditions which excite comparison are arachnodactyly, cleidocranial dysostosis and gargoylism. Each of these conditions shows a combination of mesodermal and ectodermal defects, and it remains to be proved whether they are the result of a linkage of genes or whether a single gene is responsible.

Vitamin K for Hemorrhagic Disease of Newborn.—Kugelmass states that each case of hemorrhagic disease of the newborn differs in the cause and course but that the bleeding is invariably due to prothrombin deficiency. The mild form of this disease is undoubtedly self limited and some cases are not recognized. Two of ten cases were discovered in the course of routine clotting time determinations. Severe cases respond poorly to all forms of therapy. Waddel and Guerry reported a carefully controlled human experiment: A mother had given birth to four successive infants with fatal hemorrhagic disease confirmed by necropsy. The low prothrombin content during her fifth pregnancy was brought to normal levels by an adequate diet high in fat and protein. The fifth infant was normal and without hemorrhagic symptomatology to date. Her sixth pregnancy was characterized by a similar decrease in the prothrombin level, but she refused nutritional therapy and gave birth to an infant with severe hemorrhagic disease. During her seventh pregnancy the prothrombin level was raised by adequate diet and the infant was normal. A clear-cut case of antepartum prevention of potential hemorrhagic disease was that of an undernourished woman who had given birth to a melenic infant. Since the onset of her menstruation she had occasional nosebleeds, oozing from the gums, mild metrorrhagia and ecchymoses from

easy bruising. These manifestations cleared during a previous pregnancy and since the onset of the present pregnancy, when her low prothrombin level was correlated with a limited dietary of a food faddist, apparently deficient in vitamin K, and the vitamin also decreased by persistent colonic irrigations. Her unstable blood clotting mechanism was corrected by the administration of an extract of vitamin K with each meal and an adjusted dietary regimen. At term a normal male infant was born with no evidence of hemorrhagic manifestations. Two other cases were similarly treated with vitamin K. Vitamin K administered in two mild cases of hemorrhagic disease of the newborn cleared the condition within twenty-four hours. The spontaneous bleeding ceased more rapidly than expected of a self-limited condition. Vitamin K is thus of equal value with blood transfusion in mild cases, the one forming prothrombin and the other providing it. Mild cases of hemorrhagic disease of the newborn offer no final criteria of the curative value of vitamin K because coexisting hematogenous jaundice may diminish absorption and utilization of the vitamin and thus interfere with the synthesis of prothrombin. The ability of vitamin K to raise prothrombin levels in the blood of the newborn is no index of its efficacy in hemorrhagic disease from injury to the reticulo-endothelial system involved in the formation of prothrombin. Vitamin K is nevertheless a valuable adjuvant in the treatment of latent or active hemorrhagic disease of the newborn. Treatment should not be limited to a precursor of prothrombin when the active substance, blood, can be injected. There is no indication for the use of vitamin K in a routine manner to protect the newborn from possible hemorrhagic disease. An abnormally high prothrombin content cannot prevent blood from oozing through a damaged vascular system unless the entire circulation is clotted. The contention that the prevention of hemorrhagic disease of the newborn will diminish intracranial hemorrhage is only partially true, because the former is a disease of the blood and the latter a result of trauma to the vascular system. The relative frequencies of hemorrhagic disease and intracranial hemorrhage are about one to twenty and the two diseases are more often mutually exclusive than coexistent.

British Journal of Experimental Pathology, London

21:117-160 (June) 1940

Relation of Sumatran Mite Fever to Tsutsugamushi Disease of British Malaya. R. Lewthwaite and S. R. Savoor.—p. 117.
Effect of Lysozyme on Union Between Phage and Susceptible Bacillus Megatherium. Antoinette Pirie.—p. 125.
Failure of Intraperitoneal Injection of 3:4-Benzpyrene Solution to Increase the General Susceptibility to Cancer. S. Beck.—p. 133.
Pyridine-3-Sulfonic Acid and Its Amide as Inhibitors of Bacterial Growth. H. McIlwain.—p. 136.
Influenza Virus Infections of Chick Embryo Lung. F. M. Burnet.—p. 147.
Application of Sharples Centrifuge to Study of Viruses. J. McIntosh and F. R. Selbie.—p. 153.

Indian Medical Gazette, Calcutta

75:257-320 (May) 1940

Role of Oblique Osteotomy of Upper End of Femur in Hip Joint Surgery. M. G. Kini.—p. 257.
Outbreak of Epidemic Dropsy. R. N. Chopra, C. L. Pasricha and K. Banerjee.—p. 261.
Observations on Amebiasis and Its Treatment. M. Mayer.—p. 262.
Quinine and Atabrine in Control of Malaria, with Special Emphasis on Practical and Economic Points of View. B. A. Lamprell.—p. 266.
Mode of Origin and Progress of Anemia in Pregnant Tea Garden Coolies. K. P. Hare.—p. 274.
*Simple and Efficient Remedy in Treatment of Scabies. F. A. B. Sheppard.—p. 279.
Simple Method of Tomography. R. Viswanathan and P. Kesavaswamy.—p. 279.
Streptococcus Pyogenes in Throats of Sample of Healthy Individuals. C. L. Pasricha and G. Panja.—p. 282.
Natural Leptospiral Infection in Rat Population of Calcutta. B. M. Das Gupta.—p. 284.

Treatment of Scabies.—Sheppard used the following procedure in the treatment of 210 cases of scabies: All of the body below the neck was painted with a 40 per cent hypotonic solution of sodium thiosulfate. This was allowed to dry for about fifteen minutes and then painted with a 5 per cent solution of hydrochloric acid. The whole procedure was repeated in two hours and then the linen was changed. The procedure was repeated the next day. The patient was not permitted to take a bath before twelve hours after the conclusion of the second day's treatment. An interval of from three to five days was allowed to elapse before a second course of treatment was started. For children less than 7 years of age the solution used is half strength. The treatment has been rapidly and highly successful in the papular type of scabies. In the pustular type it was too irritant for comfort and the ordinary sulfur ointment treatment was used in such cases until the pustules dried up, and then the case was treated on the same lines as a papular case. Of the 210 patients treated 177 were cured and twenty-five were relieved. The advantages of the treatment are that it is relatively clean, and, except in the worst cases, hospitalization is unnecessary.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

47:237-364 (June) 1940

High Puncture of Membranes: Review of 842 Inductions of Labor with Drew Smythe Catheter. G. Maizels.—p. 237.
*Preliminary Observation on Gonococcic Vulvovaginitis in Children in Bengal. C. L. Mukherjee.—p. 275.
Eclampsia: Clinical and Biochemical Study. A. L. Mudaliar, A. S. M. Nayar and M. K. K. Menon.—p. 291.
Subcutaneous Emphysema Complicating Labor with Discussion as to Theories of Causation: Case. J. Kinloch-McCollum.—p. 309.
Physical and Psychologic Symptoms of Menopause. J. G. McDowell and A. S. Paterson.—p. 319.
Endometriosis of Left Cardinal Ligament Simulating Carcinoma of Cervix. A. F. Anderson.—p. 327.
Intrapartum Fetal Death Due to Intra-Uterine Rupture of Umbilical Vein. D. Friedlander.—p. 334.

Gonococcic Vulvovaginitis in Children.—Mukherjee points out that of 1,138 cases of gonorrhea treated at the clinic 125, or 11 per cent, occurred in girls under 11 years of age. The real incidence would possibly be much lower if the infection in women were more frequently recognized. Forty of the children were treated by orthodox procedures, twenty-five with female sex hormone, fifty with estrogen and local medication and ten with sulfanilamides. The cures, relapses and failures with local treatment were respectively 66.2, 22.5 and 15 per cent, with estrogen they were 44, 32 and 24 per cent and with combined treatment they were 84, 12 and 4 per cent. Of the ten cases treated with sulfanilamide seven were cured after three weeks of treatment, two after seven weeks of treatment and one could not be followed up.

Presse Médicale, Paris

48:489-512 (May 15-18) 1940

Indications and Technic of Oxygen Therapy in Cardiovascular Disorders. C. Laubry, F. Joly and C.-O. Guillaumin.—p. 489.
Contrivances for Practice of Oxygen Therapy. L. Binet and Madeleine Bochet.—p. 492.
Usefulness of the Psychogalvanic Reflex in Neurology. N. Jonesco-Sisesti and L. Copelman.—p. 494.
*Tetanus. L. Rouquès.—p. 497.

Tetanus.—Rouquès calls attention to the successful experiments with tetanus anatoxin prepared from tetanus toxin subjected to the combined action of formol and heat. This substance was observed to create and develop antitetanic immunity without local or general reactions. The therapy of tetanus is well established. It consists of early and massive administration of serum subcutaneously or intramuscularly and of anesthesia. Serum therapy, however, is solely antitoxic and has no effect on the spores that may remain in the wound. To complement the passive immunity produced by the serum with an active immunity produced by anatoxin vaccination, a mixed treatment has been recommended. This consists of injecting immediately after the diagnosis is made one massive dose of tetanus antitoxin (150,000) and a dose of 2 cc. of anatoxin, injecting further doses of anatoxin in quantities increasing in mathematical proportion, 2, 4, 6 cc. for example, five or six days apart. To avoid serous accidents the massive dose of antitoxin may be divided into several smaller doses, provided the serum is strong in antitoxin. For previously vaccinated patients with a single wound one further injection of tetanus anatoxin has been recommended. It is well to examine in every instance the place

of entry and excise possibly the cicatrix at the first symptoms of the disease. For anesthesia chloral and chloroform are used; in the presence of liver damage the chloroform is replaced by nitrous oxide or ether.

Revue Française de Pédiatrie, Paris

15:393-468 (No. 5) 1939-40

*Pneumothorax in the Newborn. M. Péhu and R. Lefebvre des Noettes.—p. 393.
An Ultramicro-Analytic Method for Determination of Calcium Level in Blood Plasma. E. Josefsson.—p. 417.
Otitis and Antritis of the Newborn and Their Reactions on Digestion. E. Schneegans.—p. 425.

Pneumothorax in the Newborn.—Péhu and Lefebvre des Noettes review the etiology, symptoms, diagnosis, therapy and prognosis of pneumothorax, with a citation of illustrative cases from the literature and an extensive bibliography. The term "newborn" is restricted by them to the first four weeks of postnatal life. Among the causes of neonatal pneumothorax the authors list obstetric trauma; artificial stimulation of respiration; brain lesions not due to natal traumatism such as intracranial hemorrhages; obstructions in the trachea such as congenital goiter and hypertrophy of the thymus; infectious disease complications such as lobar pneumonia; accidents caused by hypodermic puncture; bronchial and cardiac malformations, and a variety of causes of undetermined origin involving fundamentally rupture of the superficial alveoli of the lungs. Pulmonary tuberculosis may be eliminated as a causative agent. Three types of neonatal pneumothorax are distinguished (partial, total, high tension) and their typical roentgenographic features indicated. Dyspnea and cyanosis, characteristic signs of pneumothorax of the newborn, need to be diagnostically differentiated from pathologic conditions such as normal neonatal cyanosis, those occurring in cardiovascular malformations, and from tracheal thymus pressure, bronchial or bronchopulmonary air cysts, pulmonary atelectasis and bronchopneumonia. In all of these, clinical and roentgenoscopic observations combine to disclose the real facts. Prognosis is favorable in pneumothorax of traumatic origin and in congenital bronchial malformation in which no pathologic signs manifest themselves. In high tension pneumothorax prognosis is likewise good, provided pleural punctures succeed in preventing recurrence of air infiltration. The authors point out that the mechanism of the physiologic function of breathing when the infant first establishes independent respiration is still imperfectly understood, no elucidating roentgenograms yet existing. These mechanical factors occupy an important place in the pathogenesis of infant pneumothorax.

Giornale di Clinica Medica, Parma

21:533-624 (May 20) 1940. **Partial Index**

*Electrocardiograms in Carbon Monoxide Poisoning. G. Rastelli.—p. 533.
Relations Between Heart Diseases and Pulmonary Tuberculosis. F. Robuschi.—p. 587.

Electrocardiograms in Carbon Monoxide Poisoning.—Rastelli studied electrocardiograms of two lots of rabbits before and in the course of acute and chronic experimental carbon monoxide poisoning, and those of forty-two victims. Typical transient modifications of the ventricular complex were present in the electrocardiograms of rabbits with acute poisoning. The alterations of the electrocardiogram in acute poisoning in man, shortly after the occurrence of poisoning, consisted of a low potential action of the myocardium, auricular fibrillation, premature ventricular contraction and predominance of the left ventricle. The electrocardiograms of victims of acute poisoning became normal, in the majority of cases, in about two months. Certain permanent electrocardiographic alterations remained in some of the cases. They consisted of typical triphasic initial complexes in the second and third leads. Alterations of this type remained in the electrocardiograms of five out of twenty victims of acute poisoning in whom electrocardiograms were taken at periods of from two to five years after the acute poisoning. They were present in five out of twenty victims with chronic carbon monoxide poisoning. These alterations were of a type which, according to Katz and Sclater, indicate damage to the coronary arteries. The author concludes that carbon monoxide poisoning causes either transient or permanent lesions in the heart with consequent transient or permanent alterations in the electrocardiogram. Transient lesions are caused by anoxemia due to poisoning, whereas permanent lesions are the result of damage to the endothelial lining of the coronary arteries, as carbon monoxide has a specific injurious effect on the epithelium of the arteries.

Policlinico, Rome

47:169-212 (May 15) 1940. **Surgical Section. Partial Index**

*Histology of Some Renal Tumors. S. Ciancarelli.—p. 169.
Lipoma of Small Intestine: Two Cases. L. Gabbianelli.—p. 181.
Constitution of Adventitia Capsule of Echinococcus in Relation to Seat of Echinococcosis. A. Ligas.—p. 188.

Histology of Some Renal Tumors.—Ciancarelli discusses the question of the epithelial or adrenal origin (Grawitz) of renal tumors, particularly of hypernephroma, based on a study of four renal tumors removed by nephrectomy. The microscopic diagnosis was hypernephroma in two and papillary adenocarcinoma in two. The two patients with hypernephroma did not exhibit symptoms of endocrine disturbance, and one gave a negative Aschheim-Zondek reaction. The tumor was located in the upper pole of the kidney in one case and in the lower lobe in the other. The author found that the microscopic structure of hypernephroma and of papillary adenocarcinoma was similar. Cells with either clear or dark protoplasm were present in both tumors. The microscopic preparations of hypernephroma in one of the cases showed tubular structures of the type present in adenocarcinoma. Adrenal tumors do not present tubular structures. He believes that papillary adenocarcinoma and hypernephroma are of the same renal epithelial origin and that hypernephroma is nothing more than a variety of a renal epithelioma. The name "hypernephroma" possesses no histogenic significance. The theory of adrenal origin of hypernephroma (embryonal aberrant adrenal tissue, according to Grawitz) is based on an erroneous interpretation of the microscopic appearances of the tumor cells. The latter are more or less loaded with fat because of fatty degeneration from nephritis and may assume an appearance similar to that of adrenal cells.

Wiener klinische Wochenschrift, Vienna

53:455-474 (June 7) 1940

Timely Problems in Treatment of Diabetes. W. Falta.—p. 455.
*Vitamin C and Gastric Function. F. Lucksch.—p. 457.
Surgical Treatment of Contractions. P. Huber.—p. 459.
Treatment of Disturbances in Blood Perfusion of Arterial System. R. Singer.—p. 462.
Medicinal Treatment of Ventricular and Duodenal Ulcer. A. Breuer.—p. 466.
Results of Investigations by Physician Supervising Sports at University Institute for Physical Exercises in Vienna. W. Birkmayer.—p. 467.

Vitamin C and Gastric Function.—Regarding disordered gastric function as the cause of pellagra, Lucksch treated pellagral patients with a preparation of hog stomach. The same preparation was given also to schizophrenic and encephalitic patients with a deficiency of hydrochloric acid. It was found that the secretion of hydrochloric acid was stimulated by this medication and that the symptoms of pellagra subsided. Vitamin C also had been found helpful for pellagrous patients, but at the time this was first noted it was impossible to investigate the gastric secretion. Later the author investigated the effect of vitamin C, vitamin B, liver, liver preparations and hydrochloric acid pepsin on the gastric secretion of patients with hydrochloric acid deficiency. The hydrochloric acid pepsin was entirely ineffective. The effect of the vitamin B preparation was somewhat doubtful, but the vitamin C proved highly effective. The author points out that this action of vitamin C on the deficiency of hydrochloric acid is a new discovery, for although the literature reports favorable effects of vitamin C on hyperacidity there are no reports on its efficacy in hypo-acidity. This action of vitamin C can probably be explained by the fact that it is a substance which stimulates the entire metabolism and thus also the organs with functional insufficiency. The author suggests that it might be advisable to give vitamin C in pernicious anemia in addition to liver therapy. These experiments raise the question whether parenterally administered vitamin C acts as a substitute for its insufficient enteral absorption in pellagra or whether its curative action is due chiefly to the restoration of the gastric function.